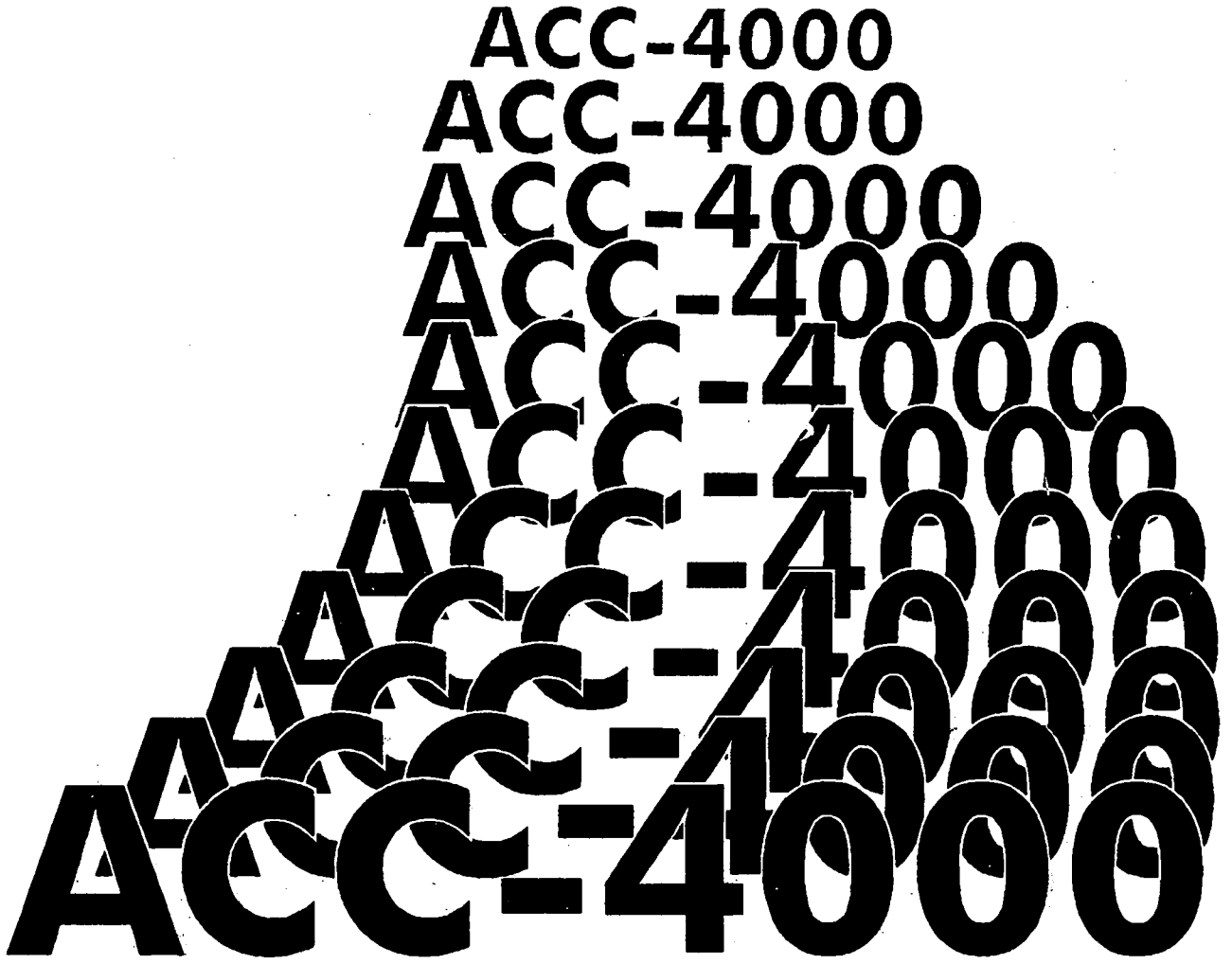
ACC-4000
Addressable Control System
Documentation
436-799-500

VOLUME III

System Administrator Reference Guide



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1 • Equipment Setup and Maintenance

Introduction

A complete ACC-4000 Controller system consists of both hardware and software components. In all cases, the initial setup of the hardware components and the installation of the software are performed by qualified General Instrument personnel.

Under normal operations you will not have to set up the physical components in the system or install the ACC-4000 software program.

However, in the case of disaster recovery, you may be required to install the software before the General Instrument support personnel arrive. Before doing this, please confer with General Instrument support personnel.

From time to time, you may also find it desirable to implement minor revisions or upgrades in the system software.

This chapter provides you with:

- A list of the hardware components of your system
- A list of additional product documentation you should retain
- Cabling specifications
- Troubleshooting checklists for hardware and software functionality
- Instructions for preparing your system to receive a minor software upgrade via modem

Required Documentation

You should retain the following documentation for use in maintaining the ACC-4000:

- *Release Notes* for a system upgrade, if applicable.
- *Site Survey*: List of additional material required.

Physical Components

The minimum hardware components of an ACC-4000 system are:

1	CPU (computer) 50 MHz with: Three hard disk drives 64 MB of RAM One 3.5-inch external drive
1	Tape drive
1	Mouse
1	16" color monitor
1	14,400 baud modem
1	Adapter kit (host) with SCSI bus
1	Terminal concentrator
1	Ethernet controller kit
1	Line printer
2	ASSY 39-inch coaxial cables (LG)
1	ASSY bulkhead connector
1	ASSY Addressable Network Interface Card (ANIC) unit
2	CATV surge protectors for data stream
1	Uninterruptable Power Supply (UPS)

General Instrument does not support components which are not obtained through General Instrument.

We recommend that you always use the Uninterruptable Power Supply (UPS) for the CPU. Although the system normally operates reliably without a UPS, its use greatly reduces the risk of data loss due to power fluctuations and outages.

The Ethernet connection (to the Ethernet card on the CPU) requires correct termination. If an incorrect termination is used, or if no termination is present, or if the Ethernet itself is not terminated, the system will operate erratically and may crash.

Cabling

The ACC-4000 system comes with two cables that are nearly identical in appearance. These are the modem cable and the monitor cable. They are, however, *not* interchangeable.

If you experience problems with either the modem or the monitor, check to make certain that each of these cables is inserted into the appropriate connector.

For reference, the pinouts for these cables are as follows:

Modem cable, RS-232 D25 to RJ, part number BC13J

D25 End	RJ End
2	4
3	5
4	2
5	7
6	8
7	1
8	6
20	3
1	x

Terminal (null modem) cable, RS-232 to RJ, part number BC13F

D25 End	RJ End
2	5
3	4
4	6
5 6	3
(shell) + 7	1
8	2
20	8

Monitor Cables

The ACC-4000 system supports the VT-420, VT-320, and VT-220 monitors. VT-100 series monitors *cannot* be used.

- VT-400 and VT-300 monitor cables: these are the off-the-shelf variety and should be commonly available.

- VT-200 monitor cables: an adapter is required for this connection. General Instrument furnishes one adapter with each system.

Hardware Check

If for any reason the electrical power supply is turned off or disconnected, use the following procedure to verify the operation of each of the hardware components.

1. Check to make sure there are no safety hazards, such as water on the floor or unsafe wiring.

2. Plug in the power cables and power up the CPU, monitors, concentrator, and printer.

   An internal hardware check of CPU memory, general functionality, and basic equipment and peripherals occurs automatically when you power up the system.

   These bootup tests are not exhaustive. Messages on both the monitor and the LED display on the front of the CPU will indicate what is taking place, and which processes have been successfully tested. Should an error occur, refer to the manufacturer's computer manual for a complete list of bootup and error messages.

3. Watch for any error codes and conditions. You may, however, disregard any DOS-related messages.

   When the hardware has been checked, the system automatically goes to the hard drives to find and load the operating system and the ACC-4000 application. During this process, a number of messages are displayed on the monitor screen. If the system boots and the user interface appears, Disk 0 is functioning. If the user interface can read any information about converters or services, then Disk 1 is functioning.

4. Check the monitor. If the monitor is functioning erratically, power it down. Wait a few seconds and power it back up. When the system has booted up, the monitor should display the logger window and clock.

5. The external concentrator has lights for each port and a single green LED labeled *HOST*. Make certain that the host light is on and steady. The LEDs that correspond to ports that contain connectors should be blinking.

6. The LA75 Printer is used in all new installations and replaces the printer/terminals used in the AH-4. Print a short report to verify that the printer is functioning properly.

7. The ANIC card must be verified by end-to-end testing. Make sure the scramblers are powered on, and use the operator interface to access the Headend Information Screen. This should show activity (data stream and commands received and executed by converters).

8. Make sure that the Ethernet module is connected to a network device or correctly terminated. **If not, the system will not boot or run properly.**

9. Check to make sure the mouse is functioning correctly by clicking on an option once the ACC-4000 application is running. If it can be used to point and select options, it is functioning properly.

10. Make sure the Keyboard Disable Switch is turned *off*. This switch (on some ACC-4000 CPUs) is hidden behind the front door. If turned *on*, the keyboard disable indicator will be amber, and the system will not recognize any input from the keyboard.

Please make sure you have done all of the above before you call General Instrument for technical help at 1-800-537-7653.

Software Checks

Wire Link Verification

Access the wire link screen (use Alt + Tab to page through the screens on the system monitor until the wire link window appears).

You will know that data is going back and forth when you see both host and remote response messages on the screen. If you don't see the messages, look at the yellow LED on the concentrator that corresponds to the connection from the billing system (wirelink 1, usually number eight). If this LED is not blinking, then data is probably not arriving from the host. Call General Instrument for help with this problem at 1-800-537-7653.

Spot Check

The following procedure checks to see how the system components are communicating.

1. Using the ACC-4000 interface, perform a DBQUICK report on a 32K group of converters. This is done by selecting this report from among the Database Utility Reports in the Reports area of the ACC-4000 program (*see Volume II, Chapter 13, Reports*).

2. If you are not an Impulse site, go to item 3 below. Otherwise, print the AUTH report to ensure that the printer, the reports, and associated processes are functioning. This is done by performing the Read Authorizations procedure (see *Volume II, Chapter 5, Impulse Operations*).

3. Make certain that the diagnostic modem is connected to position 1 of the eight-port concentrator.

4. Arrange for the Technical Response Center (TRC) to attempt to log into the ACC-4000.

Additional Checks

1. Using the ACC-4000 interface, add an in-house test converter to the ACC-4000 system. See the *Adding a Converter* procedure in V*olume II, Chapter 3, Converter Operations.*

2. Using the ACC-4000 interface, initialize this in-house test converter.

   A message should appear on the screen that the converter has been successfully initialized. The selected converter should now be tuned to channel 02 and able to receive service. If this doesn't occur, perform the necessary troubleshooting operations to identify and then solve the problem. See the *Initializing a Converter* procedure in *Volume II, Chapter 3, Converter Operations.*

3. Using the ACC-4000 interface, clear the converter. The TV connected to the converter should no longer be able to receive service. See the *Initializing a Converter* procedure in *Volume II, Chapter 3, Converter Operations.*

4. Using the ACC-4000 interface, delete the converter. All information regarding the test converter should now be deleted from the ACC-4000 database. See the *Deleting a Converter* procedure in *Volume II, Chapter 3, Converter Operations.*

Disaster Recovery

The following routine has been provided for use in the extremely unlikely case of a *destructive crash*, that is, when the ACC-4000 Controller goes down due to damaged hardware or software.

Use the following procedure *only* with guidance from General Instrument.

1. If there is mechanical damage to the computer or disk drives, repair the damage and check the hardware.

2. Turn the computer on and let the system boot up.

   If the system files are intact, the logger window and clock will automatically appear. Otherwise, the system files must be restored using the *Boot* and *Install* diskettes.

3. Log on to the ACC-4000 system using a valid password.

4. Load the database backup tape into the tape drive on the ACC-4000 computer.

5. Use the procedure described in *Chapter 4, Control and Configuration Utilities* to restore the ACC-4000 files. This decompresses and installs the customer database.

Do not use the boot or install diskettes to restore your database, unless you are being guided by a General Instrument Service Representative! Running the install diskettes causes all files on the ACC-4000 computer to be overwritten. This includes — but is not limited to — all database information, current pay services, converters, and channel schedules.

Software Upgrades

There are two types of software upgrades:

- *Major upgrades*: This involves modification to the basic database structure, and requires the complete re-installation of the ACC-4000 via the tape drive. This type of upgrade is identifiable by a new version number (for example, ACC-4000 ver 6.0).

- *Minor upgrades*: A minor upgrade involves the replacement of individual software modules. These are identified by version numbers with a non-zero decimal number (for example, ver 3.1 or 4.6.2).

Preparing for Minor Upgrades

This type of update is usually performed by General Instrument personnel using a modem. Release notes and other instructions may or may not be provided.

To ensure that the upgrade is performed smoothly and to minimize any down time, the following steps should be performed before the actual minor upgrade:

1. Make certain that the modem is:
   - Connected to the ACC-4000 Controller, as well as to a functioning telephone line.
   - Connected to an active power supply and turned on.

2. Provide General Instrument with the modem's telephone number.

Depending upon the type of upgrade being performed and other factors, it also may be necessary for General Instrument personnel to perform a variety of checks and test functions.

Depending upon how extensive the changes are in the update, it may be necessary to bring the system down, and then boot it back up.

2 • User Information

Who Has Access to the System?

A cable company usually has a number of people who, at least periodically, work on the ACC-4000 Controller. Their tasks will vary, depending upon job responsibility, and knowledge of and experience with the system. The ACC-4000 provides a flexible user access scheme that allows you to tailor the access rights to your business requirements and the needs of each user. The ACC-4000 allows the you to:

- Define user classes
- Assign a unique set of object access rights to each user class
- Select all or a subset of the operations associated with each object and assign user class access rights to the operations
- Assign a user name, password, and class name to each person authorized to use the system
- Manage the ACC-4000 access rights by adding, modifying, and deleting user classes and individual users

Before You Begin

Before adding new user classes and assigning access rights to the existing user classes, do the following:

- Look at the existing user classes and the access rights attached to each class already defined in the ACC-4000 on page 2
- Look at the 11 objects (functional groups) and the operations assigned to each one on pages 2 through 4
- Analyze your business operation to define the functions performed by individuals or groups of individuals
- Place the individuals performing similar operations into logical groups
- Match your business requirements for user access with the functional groups provided by the objects in the ACC-4000
- Develop a plan to modify existing user classes or create new user classes, as required

Default User Classes

The ACC-4000 provides four default user classes. You can modify these existing classes to meet your system's requirements.

User Class	Access Rights for Objects	Access Rights for Operations Defined for Object
Supervisor	All objects	All operations
Operator	All objects except Users/Classes	All operations except those defined for Users/Classes and the Edit Configuration Files operation in the Control System object
Factory	All objects except Users/Classes	All operations except those defined for Users/Classes and the Edit Configuration Files operation in the Control System object
Dispatcher	Access rights for Converters only	Access to the subset of converter operations required to test and initialize converters

Objects and Associated Operations

You can tailor the access rights of a user class to precisely match your business operation by permitting access to one or any combination of objects and granting permission to access operations within an object category on an individual basis. The 11 objects and their associated operations are listed below and on the following pages. These correspond to the 11 options provided by the Main Menu.

Users/Classes

Display Class
Add Class
Change Class
Delete Class
Display Class
Add User
Change User
Delete User

Message Management

Add Messages
Modify Message Characteristics
Delete Message
Broadcast Message/Maps
Add Message Maps
Modify Message Maps
Delete Message Maps

Converters

Add Converter
Change Converter
Initialize Converter
Display Converter
Test Converter
Delete Converter
Polls
Response Calls
Authorize/Deauthorize
Clear Control Keys
Quality Control
Send Global Punches
Read Authorizations
Read Purchases
Data Collection
Change RF Level
Isolate Babblers

Headend Equipment

Add Scrambler
Change Scrambler
Display Scrambler
Delete Scrambler
Read Scrambler
Set Scrambler
Clear Scrambler
Set Scrambler Modes
Get Scrambler Modes
Control Data Commander
Display Scrambler Queues

Control System

Set time/date
Edit Configuration Files
Invoke Monitor Utilities
Invoke DBTest Utility
Invoke TESTPOLLS Utility
Invoke SETLEVEL Utility
Invoke PUNCHUTIL Utility
Invoke LXTEXT Utility
JOBDEF/TSKDEF Utility
Invoke LPTest Utility
Invoke MAP Utility
Invoke XREFUTIL Utility
Database Restore
System Restore
Edit DCR Audio Keys
Invoke OSD Utility
Administration Utilities

Reports

Pay Services Report
Service History Report
Channel Schedule Report
Converter Report
Data Collection Report
Polling Report
International Maps Report
NonResponding Poll Report
DB Utilities
Password Report
Autotest Report
Default Subscriber Report
Configuration Reports
Channel Maps Report
DSE Maps Report
NonParticipating Report
Report Control

Business System Gateway

Stop
Display Debug Options
Display Logger Start Options
Change Debug Options
Change Logger Options

Data Files

System Backup
Database Backup
Transfer File
Clear File
Change File
Restore Purchase Archives

Data Path Configuration

Display Hub
Add Hub
Change Hub
Delete Hub
Invoke Timing Utility
Display Outlet
Add Outlet
Change Outlet
Delete Outlet

Services/Schedules

Display Service
Add Service
Change Service
Delete Service
Convert Services
Invoke PSL Batch Utility
Display Schedule
Add Schedule
Change Schedule
Delete Schedule

Converter Types

Display Default Converter
Change Default Converter
Display Channel Map
Change Channel Map
Add Channel Map
Delete Channel Map

Class Management

Class Management defines the objects accessed by users in each class. To enhance system security allow only a limited number of people access rights to the User/Class Menu. Usually only personnel assigned to the Supervisor class can perform class management changes.

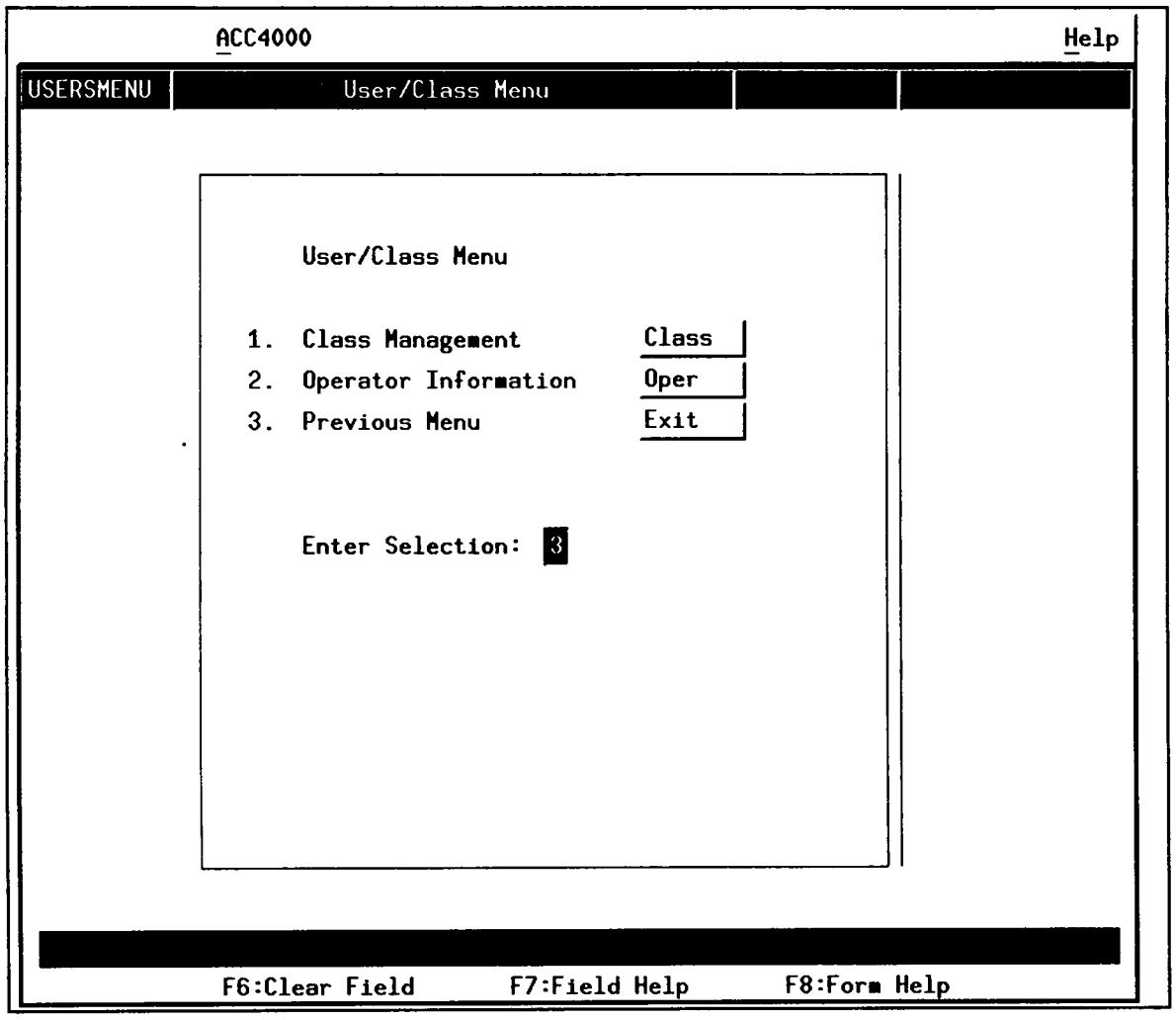
How to Change a User Class

The ACC-4000 allows you to display the objects available to each class of user. It also provides a utility to add, change, or delete the rights assigned to each of these classes.

To display and change access rights do the following:

1. Click on the Users button to select the User Information option on the Main Menu of Screen Options.

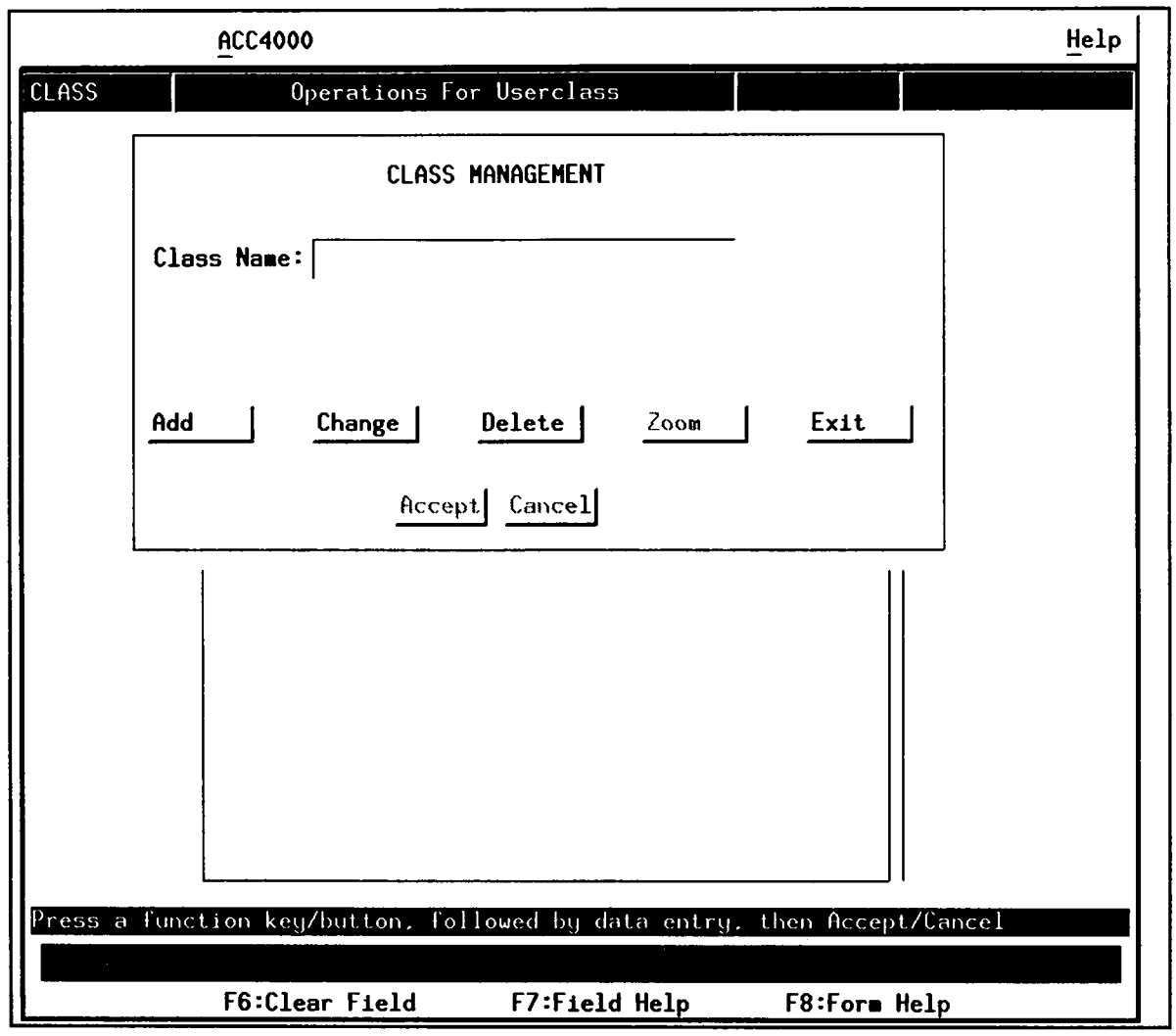
   A User/Class menu appears allowing you to select Class Management or Operator Information.



User/Class Menu

2. Click on the Class button to select the Class Management option.

A Class Management screen appears that allows you to select the add, change, or delete option.



Operations For User Class / Class Management screen

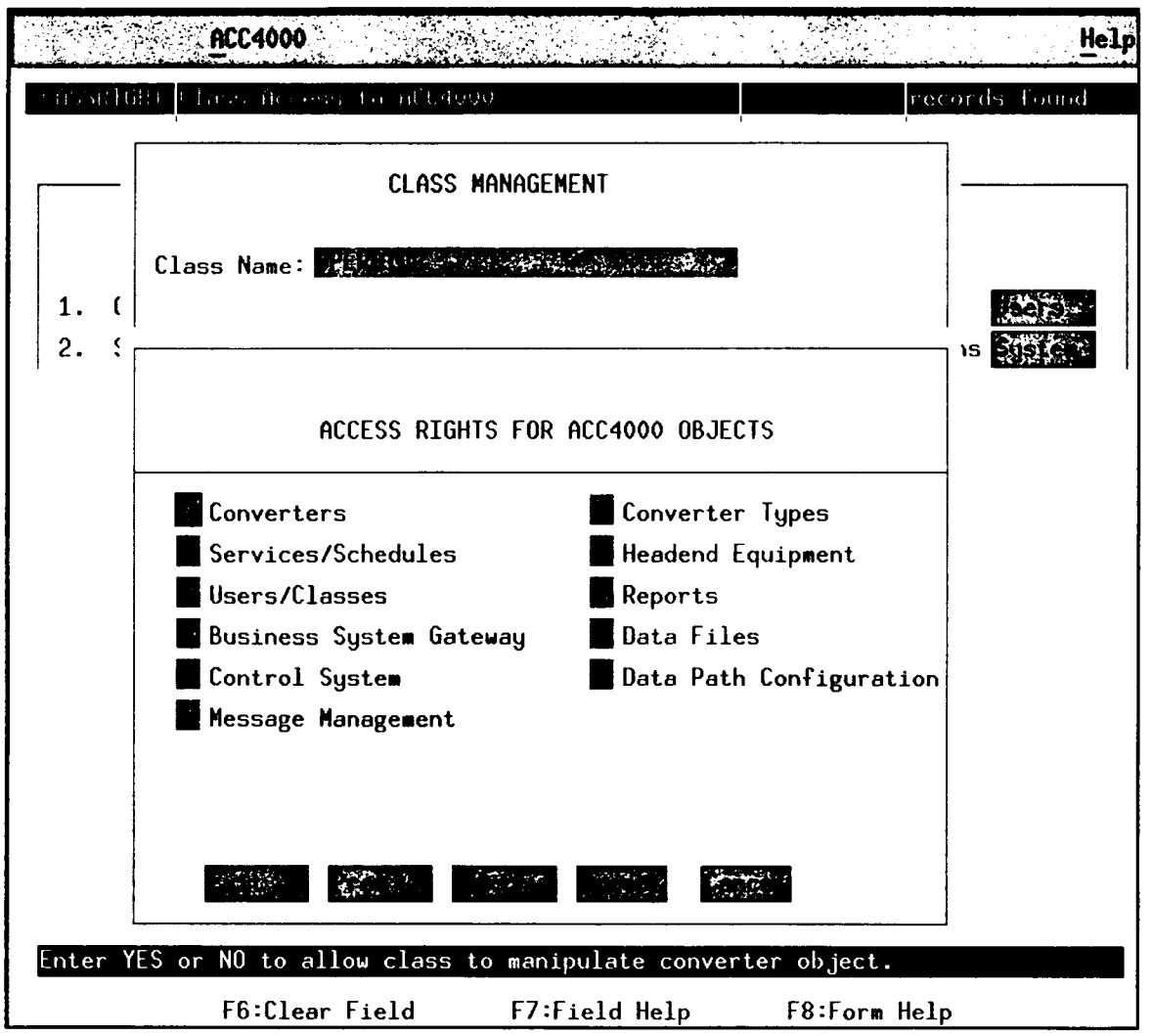
3. Click on the Change button.

   The Zoom button previously grayed out, now becomes enabled. You can use the Zoom key to display the names of all existing User Classes. See *Chapter 2, Navigating Around the ACC-4000* for the Zoom key operating instructions.

4. Type the name of the class whose access rights you want to change.

5. Click on the Accept button.

   The Access Rights for ACC-4000 Objects Rights screen appears listing the 11 objects available on the ACC-4000.



Class Access to ACC-4000 / Access Rights for ACC-4000 Objects screen

There is a Y or an N in front of each of these categories indicating whether or not the user has an access right to that major category. Change the Y and N values for these major categories, as appropriate to the level of security to be defined for that class.

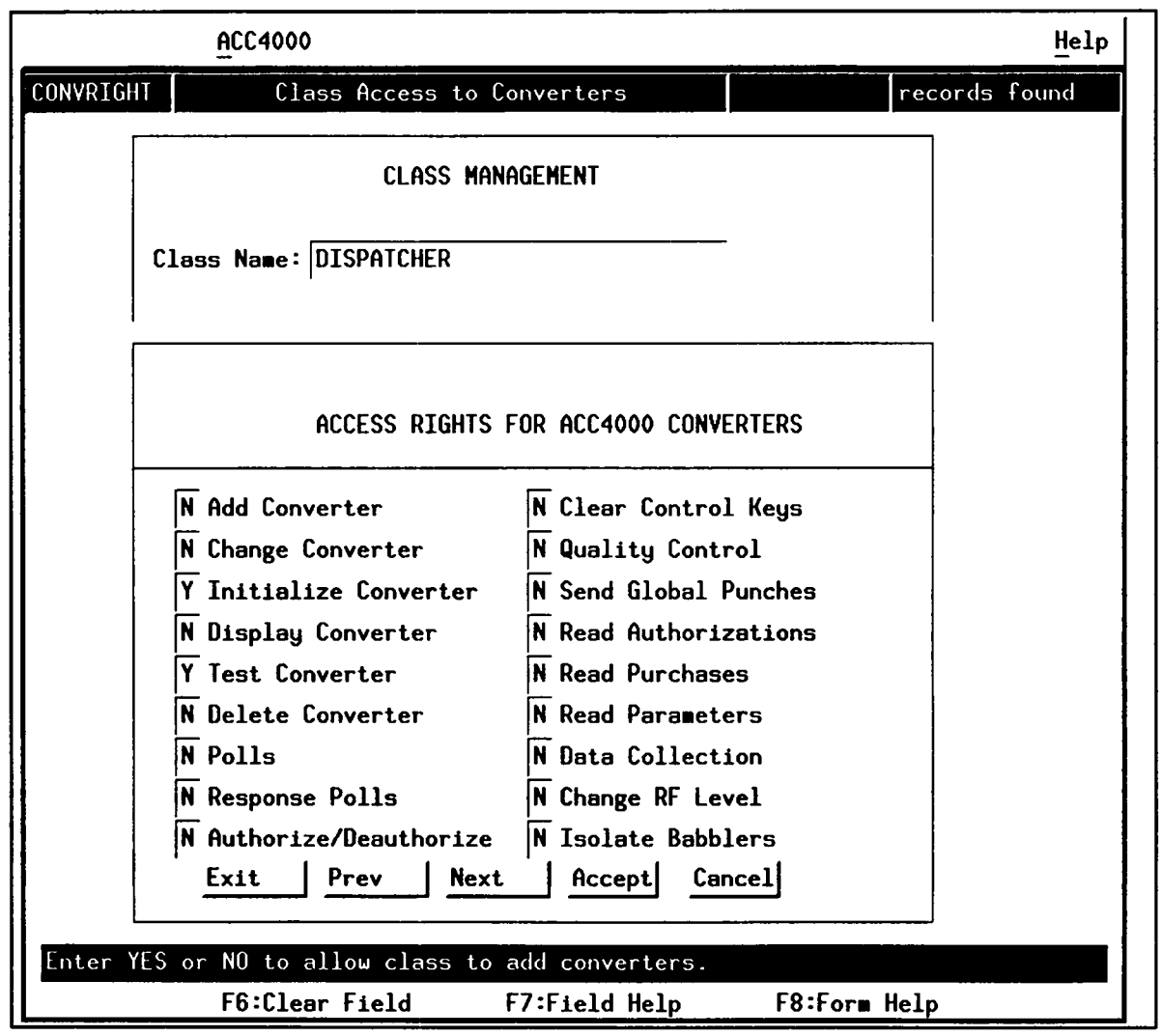
6. Use the Tab key to move to an object you want to change. Press the F6 key to clear the entry, and then type a Y or an N.

7. Continue this process until you have established all the major objects that users in this class can access.

Warning: Do not click on the Next or Prev button at this point.

8. Click on the Accept button to indicate that you are finished selecting the categories.

9. Click on Next button to see a listing of operations within the first object assigned a Y value.



Class Access to Converters / Access Rights for ACC-4000 Converters screen

10. Use the Tab key to select the access rights for the individual task you want to change. Press F6 key to clear the entry, and then type a Y or an N.

11. Continue this process until you have made all required modifications to individual operations within that category.

12. Click on the Accept button.

13. Use the Next and Prev keys to page through the screens and display the operations for the 11 objects. Use steps 10 through 12 to page through these lists of individual operations. Change the access rights where necessary.

14. Click on the Exit button after you have completed all modifications to access rights.

    You return to the Class Management screen, where you can choose to add or modify another user class or return to the User/Class Menu.

How to Add a New Class of Users

To add a new class of users follow this procedure:

1. Click on the Add button from the Class Management screen.

2. Type the name of the class to be added, and then click on the Accept button.

3. The Access Rights for ACC-4000 Objects screen appears. This lists the 11 major objects available on the ACC-4000.

   When a new user class is added to the ACC-4000, an N value is assigned as a default value to each major object. This means that until you change the values to Y, users in the class being added cannot access these objects.

   See steps 6 through 13 in the preceding section, *How to Change a User Class*, for instructions on assigning access rights to objects and the operations associated with the objects.

Deleting a Class

We do not recommend deleting a class because active users may be associated with the class. However, if it is necessary to delete a class, use the following procedure:

1. Click on the Delete button from the Class Management screen.

2. Type the name of the class to be deleted. You can also use the Zoom key to look at the names of all existing User Classes.

3. Click on the Accept button. A menu pops up asking you to confirm the deletion.

4. Click on the Yes button if deleting a user class; otherwise, click on the No button.

   The system's database removes the user class as soon as you click on Accept. The Class Management screen remains, and you can add, delete, or change another user class or exit to the User/Class Menu.

Operator Information

To enter the ACC-4000 system, an operator must be:

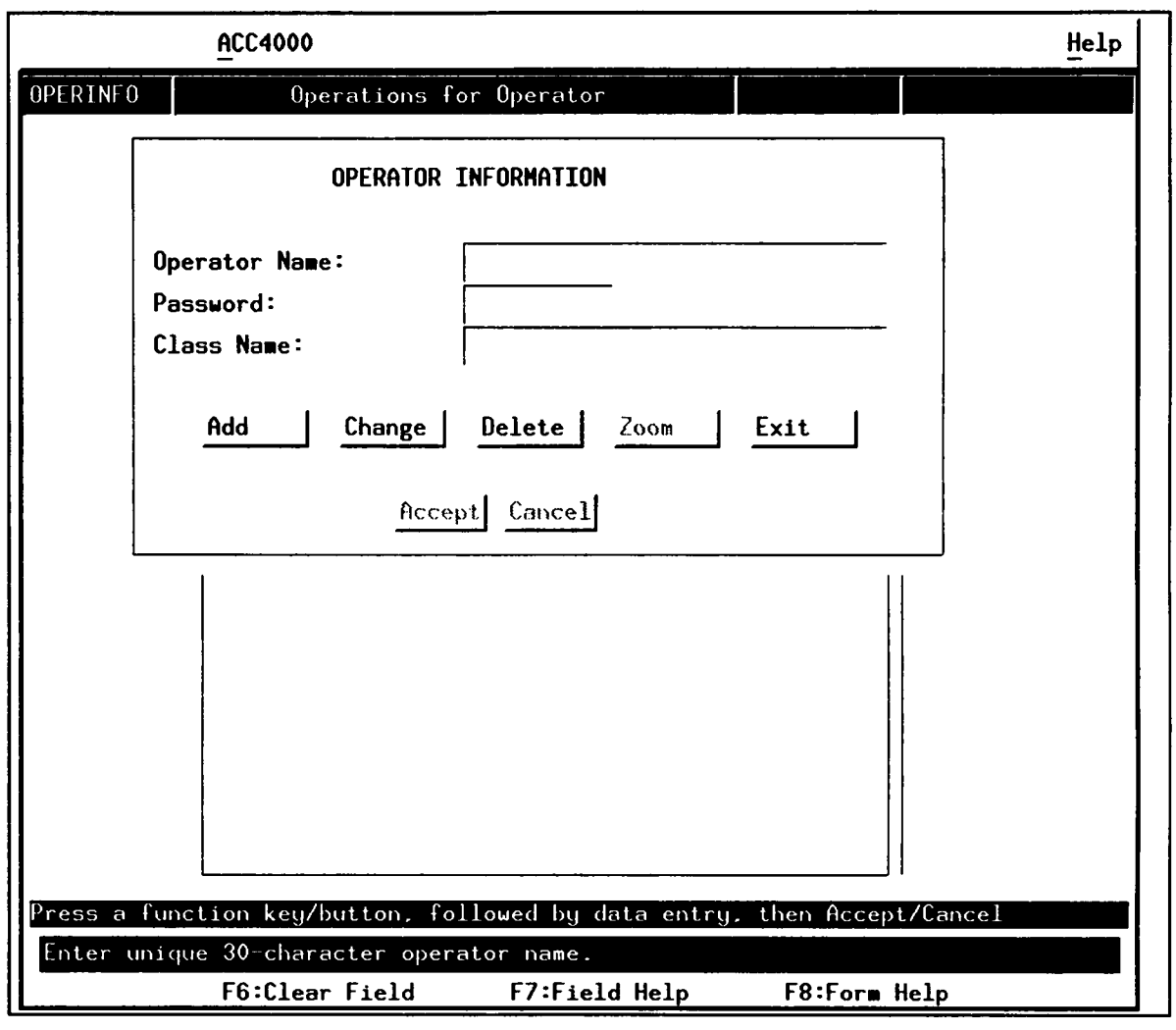
1. Assigned a user name
2. Assigned a password
3. Placed in an existing user class.

Adding a User

You do not need to add or modify a user class to add a new user. Simply enter an existing class name on the Operator Information screen and the system assigns the access rights for that class to the user.

To add users to the system:

1. Click on the Oper button from the User/Class Menu to display the Operator Information screen shown below.



Operators for Operator / Operator Information screen

2. Click on the Add button to add a user to the system.
3. Type the user's name in the Operator Name field and press the Enter key.
4. Type the Password for that user and press the Enter key.

5. Type the name of the user class to which the newly added user will be assigned. You can also use the Zoom key to look at the names of all existing user classes.

6. Click on the Accept button once all the information in the three required fields has been entered.

   All of the required user information is added to the system. Each user now has the privileges and restrictions you have defined.

Deleting a User

Changes in personnel inevitably mean that some user information should be removed from the system. You do not need to modify or delete a user class to delete a user from the system.

Use the Operator Information screen to delete users from the system.

1. Click on the Delete button from the Operator Information screen to indicate that a user will be deleted from the system.

2. Type the operator's name and click on the Accept button. You can also use the Zoom key to look at the names of all existing users within the system.

3. A menu appears asking for confirmation of the deletion.

4. Click on the Yes button if you wish to delete the user; otherwise, click on the No button.

Changing User Information

Occasionally, you may wish to change either a user's password or user's class assignment. To change the password, simply retype it. To change the user's class assignment, change the class information by entering the new Class Name for the user. Use the same procedure for both cases:

1. Click on the Change button from the Operator Information screen to indicate that a user will be added to the system.

2. Type the name of the operator whose password or user class is to be changed, and click on the Accept button. You can also use the Zoom key to look at the names of all existing users within the system.

   The Password and user class for the indicated user appear in these respective fields.

3. If desired, change the user's password and/or user class; press the Enter key.

4. Click on the Accept button when all changes have been made.

   The records in the system's database for that operator are changed.

3 • Control and Configuration Utilities

Introduction

The ACC-4000 contains many specialized utilities to help you keep your system operating at an optimum level. You access these utilities by selecting the following options on the Main Menu of Screen Options:

Data Files — See *Volume II, Chapter 9, Data Files*

Data Path Configuration — The Hub to Sub and Timing utilities listed in this option are for use by General Instrument staff (see page 2)

Control System Functions — See *Volume II, Chapter 12, Control and Configuration Utilities* for information about these utilities. The system operator uses these utilities:

- Control System Utilities Options Menu:

  SETLEVEL Utility
  XREFUTIL Utility
  PUNCHUTIL Utility
  DCR AUDIO Key Editor

- Administrator Control Options Menu:

  System Shutdown
  System Reboot

- System Date and Time
- Daylight Savings Time

This chapter discusses the following option used by the System Administrator:

- Administrator Control Option Menu

  Database Restore

The chapter lists the other utilities used by General Instrument personnel. You may be asked to use these utilities under the direction of a General Instrument staff member.

Many control and configuration utilities can alter the system performance levels, resulting in either increased or decreased efficiency. Some of the routines are primarily diagnostic, pinpointing problem areas within the system. Still other routines affect the database directly, making sweeping changes as well as fine-tuning individual items.

Data Path Configuration Utilities

As a System Administrator you do **not** run the Data Path Configuration Utilities. These utilities are used by General Instrument personnel to do the following:

Hub to Sub Utility	This utility allows a database to be partitioned logically using physical hubs.
Timing Utility	Use the timing utility to find out how long it takes to receive fast poll data.

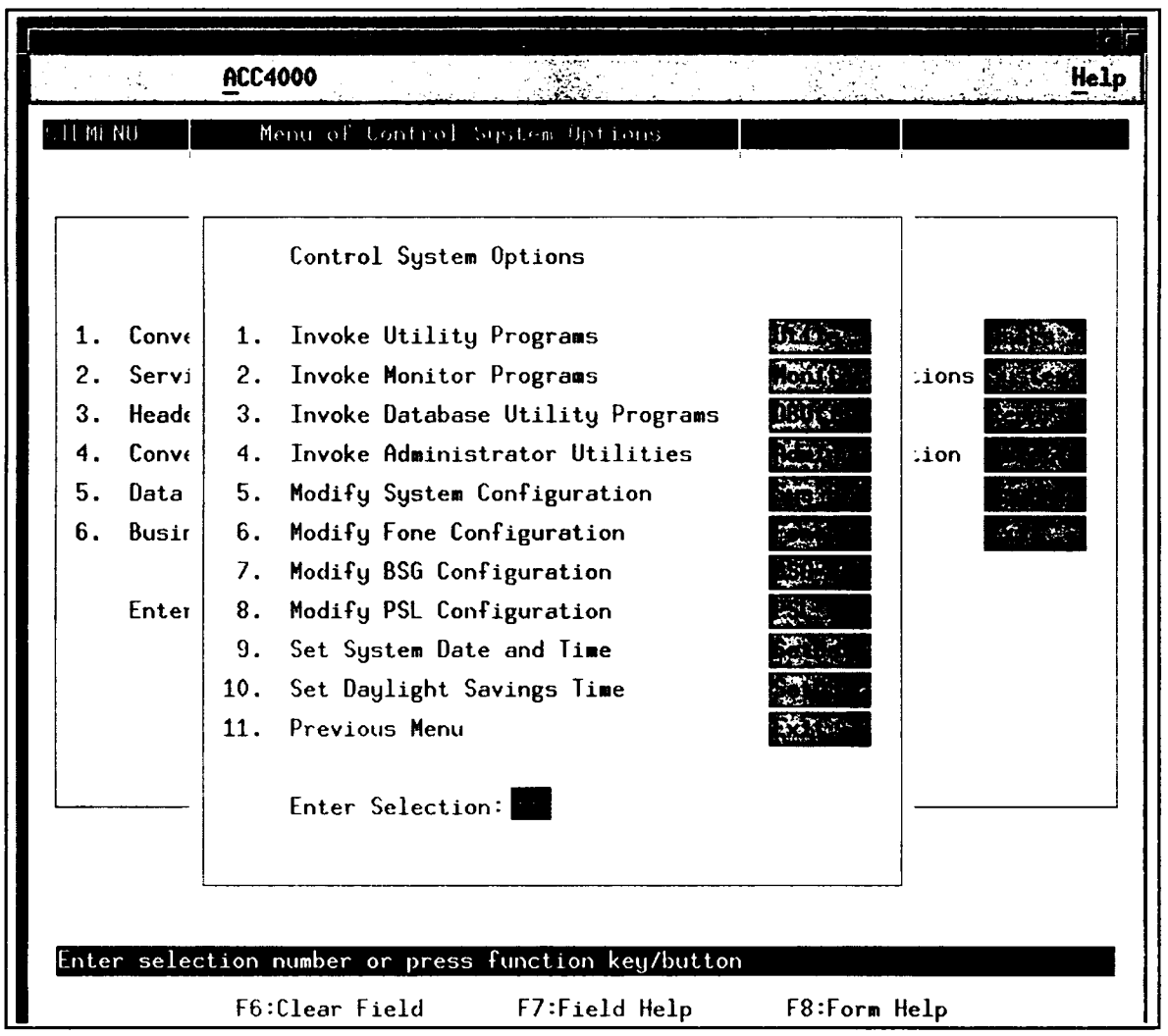
What Control System Functions Do You Use?

Control System Functions can make profound changes to your database and to your system. Use most of the functions only at the request of and with the assistance of General Instrument personnel. General Instrument staff uses some routines to perform maintenance and diagnostic functions. This section provides a description of each function including the appropriate person to use it.

How to Choose a Control System Functions Option

To choose a control system function option:

1. On the Main Menu, click on the System button to select the Control Systems Functions option. The menu appears with ten control options.



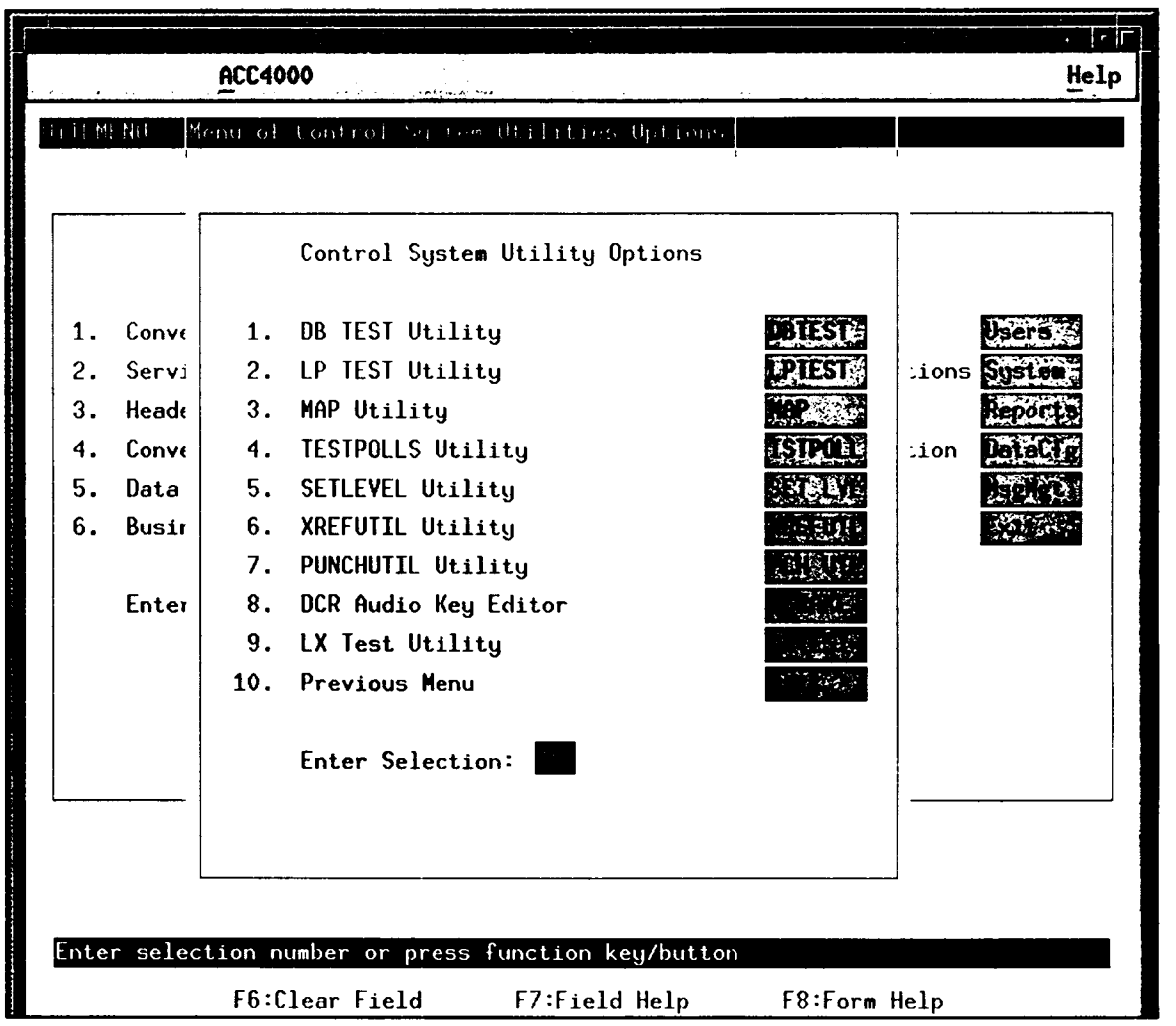
Menu of Control System Options / Control System Options Menu

2. On the Control Systems Options Menu, click on the button adjacent to the name of the option you want to select. See the appropriate section in this chapter for information concerning the function you selected.

Keep in mind that when a controller is upgraded, all settings are returned to their default status and must be reset.

How to Choose a Utility Program Option

To choose a utility program option, click on the Utils button to select the Invoke Utility Programs option on the Control System Options Menu. The Control System Utility Options Menu appears with ten options.



Menu of Control System Utility Options / Control System Utility Options Menu

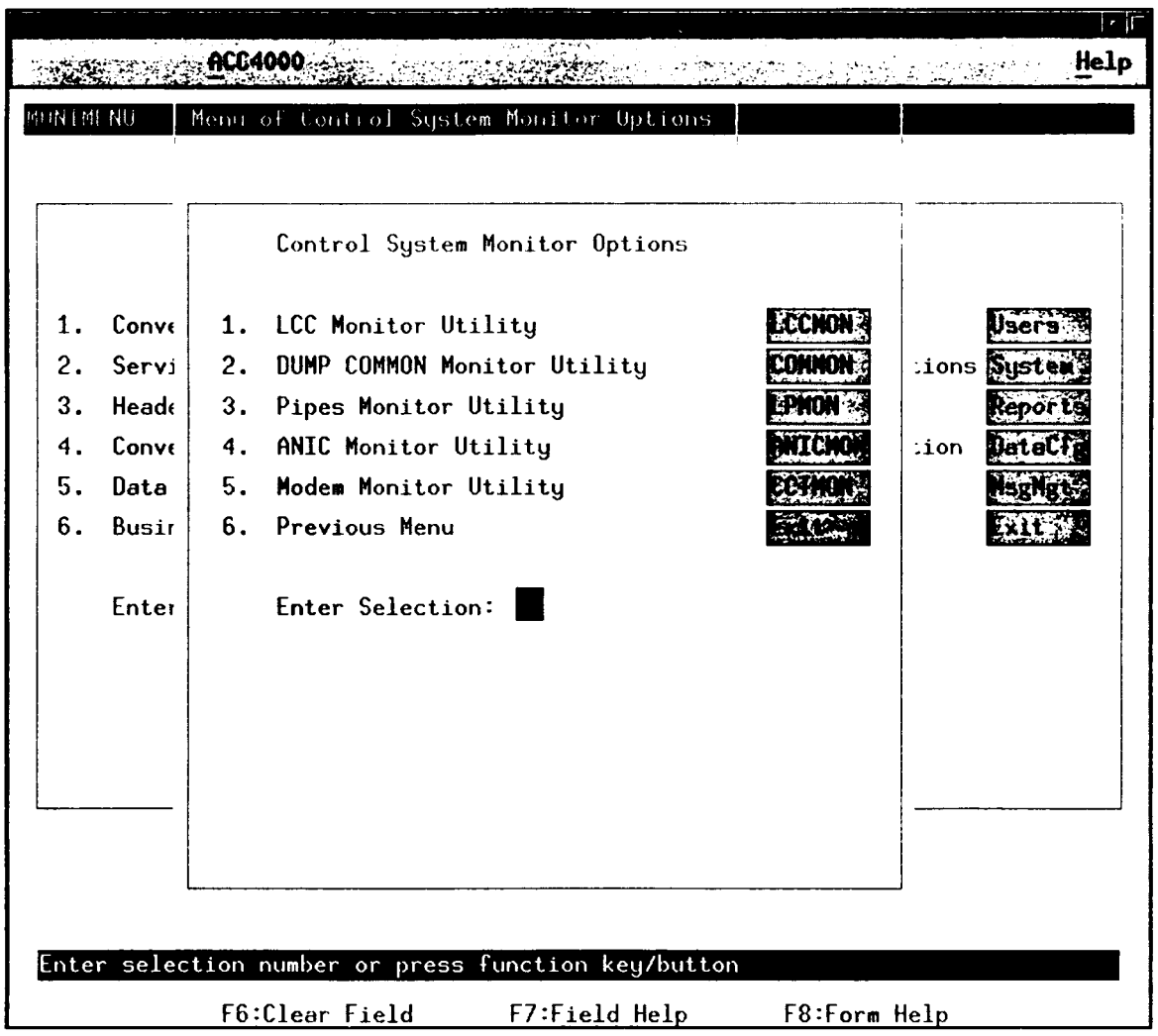
Why Do You Use the Utility Options?

You may wish to make the SETLEVEL, XREFUTIL, PUNCHUTIL, and DCR Audio Key Editor utilities available for system operator use (see *Volume II, Chapter 12, Control and Configuration Utilities*).

The remaining utilities on the menu are generally used by General Instrument personnel. Occasionally a General Instrument staff member may ask you to run one of these utilities. If so, you will receive specific instructions at that time.

How to Choose a Control System Monitor Option

To choose a monitor option, click on the Monitor button to select the Control System Monitor Options on the Main Menu of Screen Options.



Menu of Control System Monitor Options / Control System Monitor Options Menu:sample, 3-

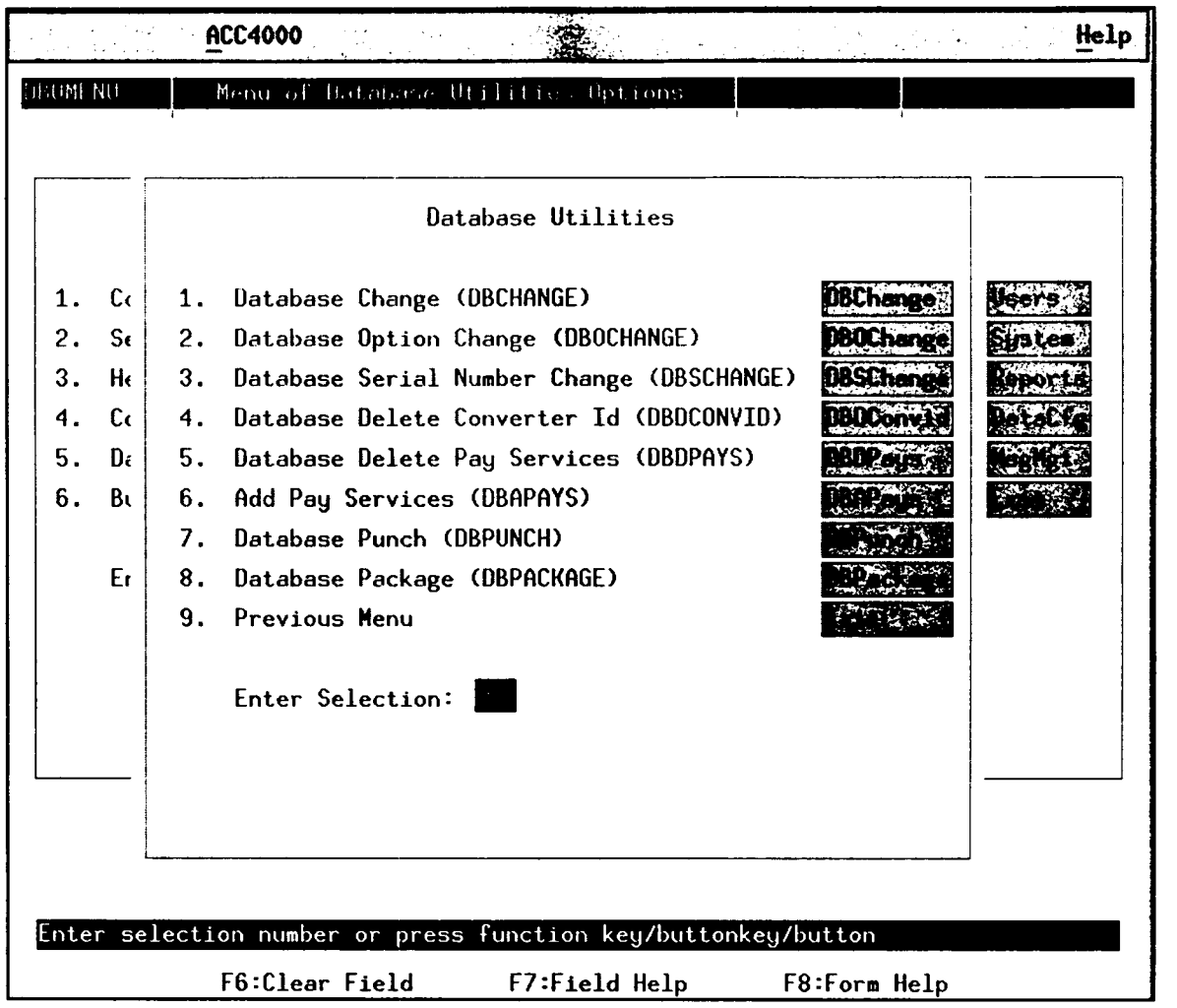
Why Do You Use the Monitor Options?

General Instrument personnel use the following Control System Monitor Options. Occasionally a General Instrument staff member may ask you to run one of these utilities. If so, you will receive specific instructions at that time.

- LCC Monitor Utility
- DUMP COMMON Monitor Utility
- Pipes Monitor Utility
- ANIC Monitor Utility
- Modem Monitor Utility

How to Choose a Database Utility Program

To choose a database utility, click on the DBUtils button on the Control System Options Menu. The Database Utilities Menu appears.



Menu of Database Utilities Options / Database Utility Menu

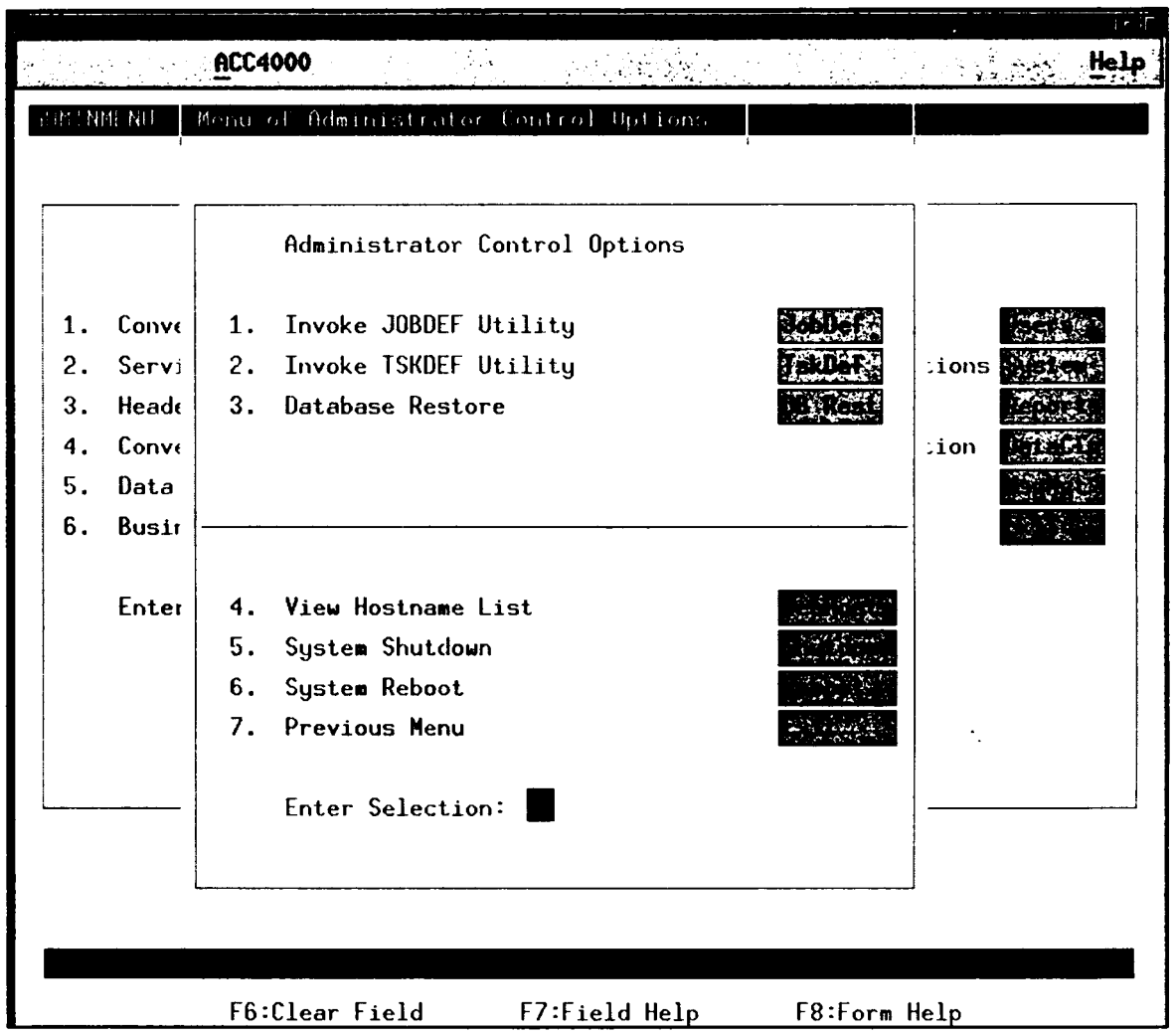
The database utility programs allow direct access to the database. General Instrument personnel use the following Database Utilities.

Database Utility	Utility Functions
Database Change	Change remote features: volume control, parental control, time display, last/favorite channel, auto test Change credit limit Change converter type Change active status globally based on service Change converter status globally based on services
Database Option Change	Change remote, parental control, volume, time display, last/favorite channel, and auto test values

Database Serial Number Change	Change serial, account and amplifier numbers Use for correcting duplicate serial numbers
Database Delete Converter ID	Select converters for deactivation or deletion Select a trial run before deactivation or deletion
Database Delete Pay Services	Delete Pay services from the converter Delete pay services from the database Rebuild pay service common
Database Add Pay Services	Add a pay service to selected subscriber records Set the initialize bit to Y for one-way boxes Sort services and eliminate duplications Add or change multiple pay services Delete pay services under certain conditions
Database Punch	Handle multiple NEWBOXES Match on converter type, converter status, and more Punch initialize, partial initialize, full change, brief change, clear address, and channel maps
Database Package	Quickly add and remove services and events to and from packages

How to Choose an Administrator Utility Option

To choose an administrator control option, click on the Admin button on the Control System Options Menu. The Administrator Control Options Menu appears.



Menu of Administrator Control Options / Administrator Control Options Menu

Why Do You Use the Administrator Options?

You may wish to make the System Shutdown and System Reboot utilities available for system operator use (see *Volume II, Chapter 12, Control and Configuration Utilities*).

If your system has a corrupted database, you can restore it using the Database Restore utility. This restores the database as it existed at the time of the backup. If you have entered any new information since the most recent backup, you must reenter it. See *Volume 2, Chapter 9, Data Files* for database backup and restore instructions.

If your system uses local network connections, you may want to use the View Hostname List option. Call 1-800-537-7653 for instructions on how to use it.

General Instrument personnel use the following Control System Utility Options.

- JOBDEF Utility
- TSKDEF Utility

Modifying Configuration Files

The configuration feature allows you to look at or modify the current version of the:

- System configuration file (config.dat)
- FONE configuration file (fonconfig.dat)
- Business System Gateway (wire link) configuration file (wlNconfig.dat)
- Pay Service Loader configuration file (pslconfig.dat)

General Instrument personnel modify configuration files. Occasionally, they may ask you to modify a file under their direction. You can set a user/class access to allow that class to view the files only or to both view and modify the files. Since changing these files changes the configuration of your system, allow very limited access to the edit configuration file operation under the Control System object.

To view or change these files:

1. Click on the appropriate button for the file you want to select on the Control System Options Menu. The file is displayed in a 132-size window.

   If you select the Business System Gateway File option, you also need to choose or confirm the wire link number that appears. Then press the Enter key.

2. Enter the modification you need to make. See *Volume II, Chapter II, Navigating Around the System* for instructions on working in a 132-size window.

3. Use the Num Lock, E key combination on a PC keyboard or the PF1, E key combination on a VT series keyboard to save your changes and exit.

   Or use the Num Lock, Q key combination on a PC keyboard or the PF1, Q key combination on a VT series keyboard to exit without saving the changes.

4. If you exit and save the changes, a prompt reminds you that you must reboot the system for the changes to take place.

This manual lists the contents of the configuration files. Look for these chapter headings:

- *Chapter 6, System Configuration File*
- *Chapter 7, Wire Link Configuration File*
- *Chapter 8, Pay Service Loader Configuration File*
- *Chapter 9, FONE System Configuration File*

4 • System Maintenance Procedures

Introduction

The tasks outlined in this chapter represent the minimum set of procedures required to ensure that your ACC-4000 and overall cable system activities are working properly. The tasks are organized by the following time headings.

- Daily
- Weekly
- Monthly
- Quarterly
- Before a major Pay-Per-View (PPV) event
- After loading new schedules

Daily

Perform the following procedures on a daily basis:

- Check Logger window and viewerrs messages
- Database backup/change the backup tape
- Check PSL's daily activity
- Perform and review data collections (two-way and FONE-way sites)
- Run purchase uploads for two-way and FONE-way systems

Check Logger Window/Viewerrs

You should look through the Logger window three times a day to check Logger window messages and to correct errors. It is particularly important to check and resolve wire link errors. Do this by:

- Looking at the wire link statistics printed a few minutes before midnight. Check the report for variations, problems, and areas for performance improvement.

- Checking to make sure that the Database Backup Starting and Database Backup Complete messages are logged. If the backup process did not complete successfully, a window with a message appears on the console. If you cannot resolve the problems, call 1-800-537-7653.

- Checking to make sure that Pay Service Loader (PSL) woke up and processed the adds and the deletes for the day.

The Logger window shows you error, warning, and informational messages. Use the viewerrs utility if you want to display only error and warning messages.

Viewing by Date Range

If the Logger window does not cover the required time frame, you can read through the logger file by using the method described below. Note all the errors you find, and resolve all errors after looking

through the file. Plan to spend from 20 minutes to several hours checking the messages, depending on the errors found.
View the messages using this procedure:

1. Open a 132-size window.
2. At the % prompt type **cd data** and press the Enter key. To verify that you are in the correct directory, type **pwd** and press the Enter key. A line appears displaying:

   usr/acc4000/data

3. To display the logger file generated since the last ACC-4000 reboot, at the % prompt type **pg acc4000_X.log**. This starts a utility called pg (pronounced page) that allows you to page through the text as you view it.
4. Since the file may be quite long, you will want to start with the last logged item you reviewed the day before. The pg utility has a search feature, denoted by a (/) slash. Please note that the search feature is case-sensitive. For example, you can search for a particular date by using this format:

   /14-Feb-95 17:34:46

5. Press Enter to advance a screen forward and press the – (minus) key to return to the previous screen. At the end of the file you automatically exit the pg utility and return to the % prompt.
6. Close the 132-size window by typing **exit** and pressing the Enter key.

How to Use the viewerrs Utility

Use the viewerrs utility if you want to see only the error and warning messages recorded in the logger file and not see the informational messages. To use this utility do the following:

1. Open a 132-size window.
2. At the % prompt type **viewerrs** and press the Enter key. On-screen instructions describe how to navigate through the messages.
3. To display a description of the viewerrs options, type **viewerrs -h** at the % prompt. You may want to use the printer options that allow you to send the output of the file to your printer.
4. After viewing the error and warning messages from the logger file, exit the file and close the 132-size window by typing **exit** and pressing the Enter key.

Database Backup

Remember to change the backup tape every day. It is important to remember to use a different tape for each day of the backup cycle, and to label each tape clearly; for example: "Wednesday Backup. Insert this tape on Tuesday."

How to Check PSL's Daily Activity

Checking the Logger window for errors in PSL downloads and printing PSL logs takes about five minutes. Check the success of the daily deletes and adds. Also check specifically for the proper processing of any input files PSL finds. Fix errors and submit new input.

To print the PSL log from the previous day:

1. Open a 132-size window.
2. At the % prompt type **cd data** and press the Enter key.
3. At the % prompt type **lp pslxxx.log** *(*where **xxx** stands for the day of the week: mon, tue, wed, thu, fri, sat, or sun) and press the Enter key.
4. Each day print the previous day's PSL file. On Monday, print the logs for the previous Friday, Saturday, and Sunday. Review the logs and research any errors found.
5. When the log prints, type **exit** and press Enter to close the 132-size window.

Check the Data Collection

Use the following procedures either to check your daily FONE-way data collection or to perform a two-way data collection.

FONE-way Systems

Plan to spend five to ten minutes looking at the Data Collection Summary Reports. The time required by step two and step three depends upon the number of collections and problems reported.

1. Review the Data Collection Summary Reports printed or logged the previous midnight.
2. Print the Purchase Data Collection Reports (see *Volume II, Chapter 13, Reports*).
3. Resolve all errors and not founds.

Two-way Systems

1. Perform a Data Collection (see *Volume II, Chapter 5, Impulse Operations*). Make certain to set the operations mode to range. The time it takes for a data collection varies, based on the number of two-way converters installed. This can be time-consuming on a large two-way system. If the Data Collection is not successful, call 1-800-537-7653.
2. Print the Purchase Data Collection Reports (see *Volume II, Chapter 13, Reports*).
3. Resolve all errors and not founds.

DBPRINTDC The DBPRINTDC utility provides a way to verify the information in the billing system and the ACC-4000. Plan to spend ten minutes looking at the DBPRINTDC report. Run this report from the Reports Menu (Main => Reports => Database Utilities => DBPRINTDC). This report prints the data collection results. Use this report to verify the billing system data verses the data collected by the ACC-4000.

Purchase Uploads

If the Data Collection is successful, run Purchase Uploads from the billing system via the wire link for both two-way and FONE-way systems. Plan to spend about ten minutes doing the uploads. This task may take longer if you encounter errors and not founds.

Weekly

Perform the following procedures on a weekly basis:

- Reboot the system
- Check Disk Free Space
- Run Database Authorization Optimization
- Run the Master Summary Non-responding Converters Report
- Run the Chronic Non-Responding and Telephone Non-participating Reports

Rebooting the System

The system will be down for about ten minutes when you reboot the system. See *Volume II, Chapter 12, Control and Configuration Utilities* for rebooting instructions.

Checking Disk Space

Checking disk space takes you about one minute. If any disk shows 90% or more usage, you must delete all unnecessary and redundant files to ensure continued proper system operation. If you need assistance, call 1-800-537-7653. See *Volume II, Chapter 9, Data Files* for instruction on how to check the disk space.

Authorization Table Optimization

Run the Authorization Table Optimization feature of the Database Optimization utility to improve system performance. This feature takes you about one minute to start and ten minutes to run. See *Volume II, Chapter 9, Data Files* for instruction on how to run all of the database optimization utilities.

Master Summary Non-responding Converters Report

Run the Master Summary Non-responding Converters Report weekly on two-way systems. This report takes ten minutes to run. This report is usually given to the plant operations manager for analysis and resolution of problems.

Chronic Non-responding and Telephone Non-participating Reports

Run both the Chronic Non-responding and Telephone Non-participating Reports for two-way and FONE-way systems. Plan to spend about ten minutes checking the reports. These reports are usually given to the plant operations manager for analysis and resolution of problems.

DBSORTPS

Plan to spend ten minutes looking at the DBSORTPS report. Run this report from the Reports Menu (Main => Reports => Database Utilities => DBSORTPS). You want to run this report well before the end of the day on Friday. Check your channels to make sure that you have enough programs scheduled to go through the weekend. You may want to do this procedure more than once a week if you have a lot of PPV events.

Monthly

Perform the following procedures on a monthly basis:

- System Backup
- DBSUMMARY Report
- Purchase Data Collection (non-fast poll)

System Backup

The system backup takes a minute to start and 45 minutes to run. The system will be down during this time. Always do a system backup as soon as possible after you have new software installed. See *Volume II, Chapter 9, Data Files* for instructions on how to do a system backup.

DBSUMMARY Report

The DBSUMMARY Report takes a minute to start and about 30 minutes to run. If the report shows errors, fix the problems and run the report again. Repeat the process until there are no more errors on the report. Keep the reports for reference purposes for at least six months. See *Volume II, Chapter 13, Reports* for instructions on how to run this report.

Purchase Data Collection (non-fast poll)

Use the non-fast poll Purchase Data Collection for two-way systems. This data collection takes a minute to start and up to one full day to run. It skips the fast poll portion of the data collection and asks every converter for purchase data. Compare the number of non-responding converters with results from your last non-responding converters poll. Compare the number of non-responding converters and the number of purchases with your last data collection results. If there are significantly larger than normal purchases or more converters

responding, you may have fast poll timing problems that need correction. If the data collection isn't successful, call 1-800-537-7653.

When you start the Purchase Data Collection, make certain to set the Current Operations Mode to range on the Impulse Operations screen. Answer No to the question "Initiate first pass of data collection?" See *Volume II, Chapter 5, Impulse Operations* for instruction on how to do data collection.

Quarterly

Perform the following procedures on a quarterly basis:

- Database Optimization
- Clean tape drive heads

Database Optimization

Database optimization takes a minute to start and two to three hours to run. Remember to take the wire links down before you begin this process. See *Volume II, Chapter 9, Data Files* for an explanation of the database optimization options and instructions on how to use these utilities.

Clean Tape Drive Heads

Use the kit supplied with the ACC-4000 Controller to clean the tape drive heads. The manufacturer recommends cleaning the tape drive heads every eight hours of tape drive operation. General Instrument estimates that this corresponds to once every quarter. Your system may vary.

Before a Major Pay-Per-View Event

Perform the following procedures before a major PPV event:

- Reboot the system
- Show queues
- DBQUICK report

Rebooting the System

Make certain that you reboot the system **two days** before a major PPV event. A reboot takes ten minutes. See *Volume II, Chapter 12, Control and Configuration Utilities* for instructions on rebooting your system.

Show Queues

Make certain that you show the queues on the scrambler to check every major PPV event. Show the queues at least 24 hours before the event. See *Volume 11, Chapter 7, Headend Equipment* for instructions on showing the scrambler queues.

DBQUICK

It is especially important that you run the DBQUICK report before a major PPV event because it confirms the number of converters that receive the authorization. The report takes less than five minutes to complete. You run this report from the Reports Menu (Main => Reports => Database Utilities => DBQUICK).

After New Schedules Have Been Loaded

Perform the following procedures after you load new schedules:

- DBSORTPS report
- Check downloaded file

DBSORTPS Report

Plan to spend ten minutes looking at the DBSORTPS report. Run this report from the Reports Menu (Main => Reports => Database Utilities => DBSORTPS). Check your channels to make sure that the new programs are scheduled.

Check Downloaded File

After you download a file from your pay service provider, check to determine if PSL sorted the records correctly. This takes about five minutes to check. You can monitor the Logger window after you complete the download, or you can view the PSL log file. To view the PSL log file:

1. Open a 132-size window.
2. At the % prompt type **cd data** and press the Enter key. To verify that you are in the correct directory, type **pwd** and press the Enter key. A line appears displaying:

   usr/acc4000/data

3. To display the PSL log file, at the % prompt type **pg psldd.log**, where **ddd** is the day of the week, and press Enter.
4. Continue to press Enter to move through the file one screen at a time.

5 • Converter Types and Features

Introduction

In the ACC-4000 system, all Converter Types are identified by the following type numbers:

Type	Name	Description
1	DRZ STARCOM II, 400, 450	One-way, PROM-based
2	DRZA STARCOM 450	One-way, PROM-based, 128 Tags
3	DRZI STARCOM 450/P3	One-way, PROM-based, 256 Tags
4	DRZI AT STARCOM 450	Two-way
5	XT5 STARCOM V	One-way
6	XT5 STARCOM V	Two-way
7	DRZI AV STARCOM 450	One-way
8	DP5 STARCOM 6+	FONE-way
9	DL4 STARCOM V	One-way
10	DP5 STARCOM 6+	One-way
11	DP5 STARCOM 6+	Two-way
12	DPBB STARCOM 6+	One-way
13	DPBB STARCOM 6+	FONE-way
14	DPBB STARCOM 6+	Two-way
15	DP7 IMPULSE 7000	One-way
16	DP7 IMPULSE 7000	FONE-way
17	DP7 IMPULSE 7000	Two-way
18	DP7 IMPULSE 7000	One-way
19	DP7 IMPULSE 7000	FONE-way
20	DP7 IMPULSE 7000	Two-way
21	DPBB 6+ Master/Slave	One-way
22	DPBB 6+ Master/Slave	FONE-way
23	DPBB 6+ Master/Slave	Two-way
24	IDP7 International	One-way
25	IDP7 International	FONE-way
26	IDP7 International	Two-way
27	DCR	One-way

Type	Name	Description
28	DCR	FONE-way. Not implemented.
29	DCR	Two-way. Not implemented.
30	CFT2000	One-way
31	CFT2000	FONE-way
32	CFT2000	Two-way
33	STARPORT	One-way
34	STARPORT	FONE-way. Not implemented.
35	STARPORT	Two-way. Not implemented.

IMPULSE 7000 Considerations

The IMPULSE 7000:

- Is the same as STARCOM VII.
- Converter Types 19 and 20 perform the same functions as the STARCOM VI+.
- Comes in three versions:
  1. DP7100 - RF unit, channel 2 or 3 output.
  2. DPV7200 - offers volume control for RF systems, and a software-selectable output channel letting you switch between the two converter outputs.
  3. DPBB7300 - baseband unit, and a software-selectable output channel letting you switch between the two converter outputs.

International CFT-2000 Consideration

Set parameter [245] International converter flag in your system configuration file, config.dat, to T when using international CFT-2000 converters.

Explanation of Codes

STARCOM II, 400, 450 — One-Way (Type 1)

```
                                  D  R  X  -  *  -  * *  -  * *
                                  |  |  |     |     | |     | |
Digital ---------------------------D  |  |     |     | |     | |
Remote Ready ------------------------ R  |     |     | |     | |
400 MHz/RF Unit --------------------------X     |     | |     | |
                                                |     | |     | |
Channel Output ---------------------------2, 3 or 4  | |     | |
                                                      | |     | |
With A/B Switch ------------------------------------- A B     | |
Without A/B Switch ---------------------------------- Blank   | |
                                                              | |
Special Product Order (SPO) ------------------------------------ * *
```

STARCOM 450 (without IR enable/disable) — One-Way (Type 2)

```
                                  D  R  Z  *  -  *  A  -  *  * *  -  * *
                                  |  |  |  |     |  |     |  | |     | |
Digital ---------------------------D  |  |  |     |  |     |  | |     | |
Remote Ready ------------------------ R  |  |     |  |     |  | |     | |
450 MHz/RF Unit --------------------------Z  |     |  |     |  | |     | |
                                             |     |  |     |  | |     | |
Enhanced Parental Control ------------------ P     |  |     |  | |     | |
Dynamic Scrambling -------------------------- D     |  |     |  | |     | |
Non-Volatile Memory ------------------------- N     |  |     |  | |     | |
Master ---------------------------------------- M     |  |     |  | |     | |
Slave ------------------------------------------ S     |  |     |  | |     | |
                                                      |  |     |  | |     | |
Channel Output ------------------------------------ 2, 3 or 4  |  | |     | |
Addressable ---------------------------------------------------- A  | |     | |
                                                                   | |     | |
5 Set-Top Keys ------------------------------------------------------ 5  | |     | |
18 Set-Top Keys ----------------------------------------------------- Blank | |     | |
                                                                           | |     | |
With A/B Switch ------------------------------------------------------------ A B     | |
Without A/B Switch --------------------------------------------------------- Blank   | |
                                                                                     | |
Special Product Order (SPO) ------------------------------------------------------------ * *
```

STARCOM 450/P3 (with IR enable/disable) — One-Way (Type 3)

D R Z I * - * A - * * * - * *

Digital ---------- D
Remote Ready ---------- R
450 MHz/RF Unit ---------- Z
IR Enable/Disable ---------- I

Enhanced Parental Control ---------- P
Dynamic Scrambling ---------- D
Non-Volatile Memory ---------- N
Master ---------- M
Slave ---------- S

Channel Output ---------- 2, 3 or 4
Addressable ---------- A

5 Set-Top Keys ---------- 5
18 Set-Top Keys ---------- Blank

With A/B Switch ---------- A B
Without A/B Switch ---------- Blank

Special Product Order (SPO) ---------- * *

STARCOM 450 — Two-Way (Type 4)

```
                                  D  R  Z  I  *  -  *  A  T  -  *  *  *  -  *  *
                                  |  |  |  |  |     |  |  |     |  |  |     |  |
Digital ---------------------------D  |  |  |  |     |  |  |     |  |  |     |  |
Remote Ready ------------------------- R  |  |  |     |  |  |     |  |  |     |  |
450 MHz/RF Unit ---------------------- Z  |  |  |     |  |  |     |  |  |     |  |
IR Enable/Disable ----------------------- I  |  |     |  |  |     |  |  |     |  |
                                           |  |     |  |  |     |  |  |     |  |
Enhanced Parental Control ------------------P  |     |  |  |     |  |  |     |  |
Dynamic Scrambling -------------------------- D     |  |  |     |  |  |     |  |
Non-Volatile Memory ------------------------- N     |  |  |     |  |  |     |  |
Master -------------------------------------- M     |  |  |     |  |  |     |  |
Slave ---------------------------------------- S     |  |  |     |  |  |     |  |
                                                    |  |  |     |  |  |     |  |
Channel Output ------------------------------------2, 3 or 4  |  |     |  |  |     |  |
                                                       |  |     |  |  |     |  |
Addressable ------------------------------------------------ A  |     |  |  |     |  |
Two-way Unit via STARVUE ------------------------------------- T     |  |  |     |  |
                                                                   |  |  |     |  |
5 Set-Top Keys ------------------------------------------------------ 5  |  |     |  |
18 Set-Top Keys ----------------------------------------------------- Blank  |  |     |  |
                                                                            |  |     |  |
With A/B Switch ----------------------------------------------------------- A B  |     |  |
Without A/B Switch -------------------------------------------------------- Blank  |     |  |
                                                                                  |     |  |
Special Product Order (SPO) ------------------------------------------------------ *  *
```

STARCOM V — One-Way (Type 5)

```
                                  X  T  5  -  *  1  *  -  *  *
                                        |     |  |  |     |  |
550 MHz/RF Unit ---------------------- 5     |  |  |     |  |
                                             |  |  |     |  |
Channel Output (2/3) ------------------------2  |  |     |  |
Channel Output (3/4) ------------------------4  |  |     |  |
                                                |  |     |  |
One-way Unit--------------------------------------- 1  |     |  |
                                                      |     |  |
Single Cable ---------------------------------------------0     |  |
Dual Cable -----------------------------------------------1     |  |
                                                                |  |
Special Product Order (SPO) ------------------------------------ *  *
```

STARCOM V — Two-Way (Type 6)

```
                                        X  T  5  -  *  2  *  -  *  *
                                                    |     |  |  |     |  |
550 MHz/RF Unit ------------------------- 5        |  |  |  |     |  |
                                                    |  |  |  |     |  |
Channel Output (2/3) ------------------------------- 2  |  |  |     |  |
Channel Output (2/3) ------------------------------- 4  |  |  |     |  |
                                                       |  |  |     |  |
Two-way Unit ---------------------------------------- 2  |  |     |  |
                                                          |  |     |  |
Single Cable ---------------------------------------------0  |     |  |
Dual Cable -----------------------------------------------1  |     |  |
                                                             |     |  |
Special Product Order (SPO) ------------------------------------- *  *
```

STARCOM 450-*AV Downloadable — One-Way (Type 7)

```
                                  D  R  Z  I  *  -  *  A  V  -  *  *  *  -  *  *
                                  |  |  |  |  |     |  |  |     |  |  |     |  |
Digital --------- D               |  |  |  |  |     |  |  |     |  |  |     |  |
Remote Ready ---- R               |  |  |  |  |     |  |  |     |  |  |     |  |
450 MHz/RF Unit ---- Z  |  |      |  |  |  |  |     |  |  |     |  |  |     |  |
IR Enable/Disable ----- I  |      |  |  |  |  |     |  |  |     |  |  |     |  |
                           |      |  |  |  |  |     |  |  |     |  |  |     |  |
Enhanced Parental Control -- P    |  |  |  |  |     |  |  |     |  |  |     |  |
Dynamic Scrambling ----------- D  |  |  |  |  |     |  |  |     |  |  |     |  |
Non-Volatile Memory ---------- N  |  |  |  |  |     |  |  |     |  |  |     |  |
Master ----------------------------M  |  |  |  |     |  |  |     |  |  |     |  |
Slave ------------------------------ S  |  |  |  |     |  |  |     |  |  |     |  |
                                        |  |  |  |     |  |  |     |  |  |     |  |
Channel Output ------------------- 2, 3 or 4  |  |     |  |  |     |  |  |     |  |
Addressable ------------------------------------ A  |     |  |  |     |  |  |     |  |
One-way Downloadable ----------------------------V     |  |  |     |  |  |     |  |
                                                       |  |  |     |  |  |     |  |
5 Set-Top Keys ------------------------------------------5  |  |     |  |  |     |  |
18 Set-Top Keys ------------------------------------- Blank  |  |     |  |  |     |  |
                                                             |  |     |  |  |     |  |
With A/B Switch ------------------------------------------------A  B     |  |     |  |
Without A/B Switch ---------------------------------------------Blank     |  |     |  |
                                                                         |  |     |  |
Special Product Order (SPO) ------------------------------------------------- *  *
```

STARCOM VI+/STARFONE — FONE-Way (Type 8)

```
                                    D P  *  5  -  *  3  *  -  * *
                                     | |  |  |     |  |  |     | |
Downloadable Plus ----------------- D P  |  |     |  |  |     | |
                                         |  |     |  |  |     | |
Without Volume Control -------- Blank    |     |  |  |     | |
Volume Control ------------------------- V    |  |  |     | |
550 MHz/RF Unit ------------------------- 5    |  |  |     | |
                                               |  |  |     | |
Channel 2 Output (without Volume Control) --- 2    |  |     | |
Channel 3 Output (without Volume Control) --- 3    |  |     | |
Channel 4 Output (without Volume Control) --- 4    |  |     | |
Channel 2/3 Output (with Volume Control) ----- 2    |  |     | |
Channel 3/4 Output (with Volume Control) ----- 4    |  |     | |
                                                    |  |     | |
Two-way Unit via STARFONE --------------------------3  |     | |
                                                       |     | |
Without A/B Switch and Circuitry ---------------------- 0     | |
With A/B Switch and Circuitry ------------------------- 1     | |
With A/B Circuitry Only ------------------------------- 2     | |
                                                              | |
Special Product Order (SPO) ------------------------------------ * *
```

STARCOM VI —One-Way (Type 9)

```
                                    D L  4  *  -  *  *  -  * *  -  * *
                                     | |  |  |     |  |     | |     | |
Downloadable Plus ----------------- D L  |  |     |  |     | |     | |
                                         |  |     |  |     | |     | |
450 MHz/RF Unit ------------------------ 4  |     |  |     | |     | |
Alternate Channel Map ------------------- A     |  |     | |     | |
                                                |  |     | |     | |
Channel Output 2 ------------------------------- 2  |     | |     | |
Channel Output 3 ------------------------------- 3  |     | |     | |
Channel Output 4 ------------------------------- 4  |     | |     | |
                                                   |     | |     | |
Without A/B Switch and Circuitry ------------------0     | |     | |
With A/B Switch and Circuitry --------------------- 1     | |     | |
With A/B Circuitry Only ---------------------------- 2     | |     | |
                                                          | |     | |
Special Channel Map (01-99) ------------------------------- * *     | |
                                                                    | |
Special Product Order (SPO) ------------------------------------------ * *
```

STARCOM VI+ — One-Way (Type 10)

```
                                                D P  *  5  -  *  1  *  -  * *
                                                | |  |  |     |  |  |     | |
Downloadable Plus ------------------------------D P  |  |     |  |  |     | |
                                                   |  |     |  |  |     | |
Without Volume Control -------------------------- Blank  |     |  |  |     | |
Volume Control ---------------------------------- V      |     |  |  |     | |
550 MHz/RF Unit --------------------------------- 5      |     |  |  |     | |
                                                         |     |  |  |     | |
Channel 2 Output (without Volume Control) ------ 2       |     |  |  |     | |
Channel 3 Output (without Volume Control) ------ 3       |     |  |  |     | |
Channel 4 Output (without Volume Control) ------ 4       |     |  |  |     | |
Channel 2/3 Output (with Volume Control) -------- 2      |     |  |  |     | |
Channel 3/4 Output (with Volume Control) -------- 4      |     |  |  |     | |
                                                         |     |  |  |     | |
One-way Addressable ----------------------------------- 1      |  |     | |
                                                               |  |     | |
Without A/B Switch and Circuitry ------------------------------ 0  |     | |
With A/B Switch and Circuitry --------------------------------- 1  |     | |
With A/B Circuitry Only ---------------------------------------- 2  |     | |
                                                                     |     | |
Special Product Order (SPO) ------------------------------------------------ * *
```

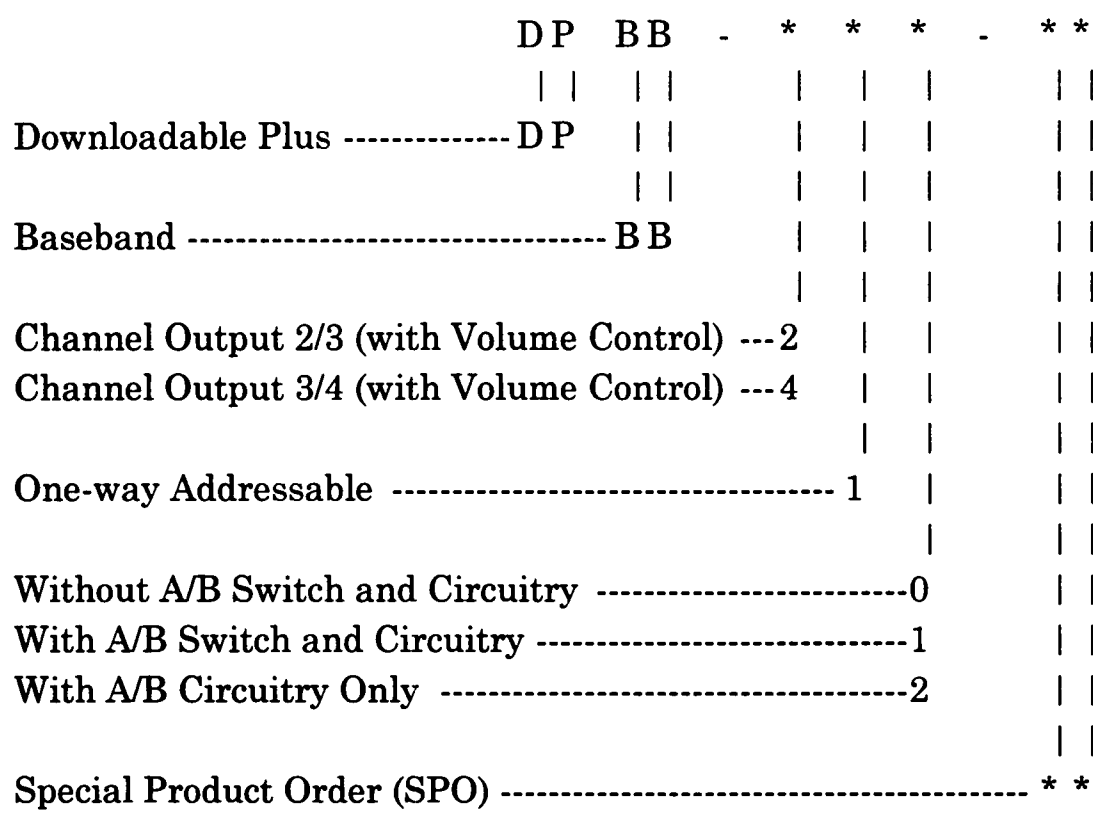
If the SPO is R1 or higher, the converter has the time controlled programming (TCP) option.

STARCOM VI+ — Two-Way (Type 11)

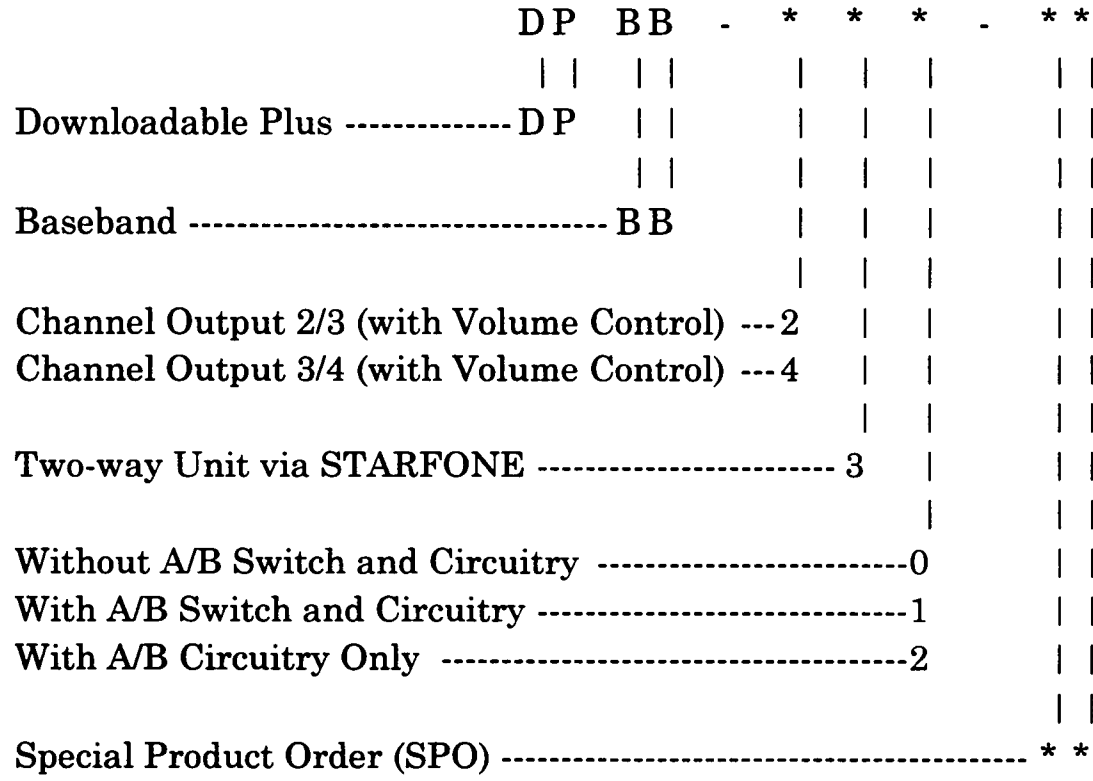
```
                                    D P  *  5  -  *  2  *  -  * *
                                    | |  |  |     |  |  |     | |
Downloadable Plus ----------------- D P  |  |     |  |  |     | |
                                    |  |  |     |  |  |     | |
Without Volume Control -------- Blank  |  |     |  |  |     | |
Volume Control ------------------------ V  |     |  |  |     | |
550 MHz/RF Unit ----------------------------5     |  |  |     | |
                                                  |  |  |     | |
Channel 2 Output (without Volume Control) --- 2   |  |  |     | |
Channel 3 Output (without Volume Control) --- 3   |  |  |     | |
Channel 4 Output (without Volume Control) --- 4   |  |  |     | |
Channel 2/3 Output (with Volume Control) ----- 2  |  |  |     | |
Channel 3/4 Output (with Volume Control) ----- 4  |  |  |     | |
                                                  |  |  |     | |
Two-way Addressable ------------------------------------2  |     | |
                                                           |     | |
Without A/B Switch and Circuitry ---------------------------- 0  | |
With A/B Switch and Circuitry ------------------------------- 1  | |
With A/B Circuitry Only ------------------------------------- 2  | |
                                                                 | |
Special Product Order (SPO) ---------------------------------------* *
```

If the SPO is R1 or higher, the converter has the TCP option.

STARCOM VI+ Baseband — One-Way (Type 12)


D P B B - * * * - * *
Downloadable Plus ---------- D P
Baseband ---------- B B
Channel Output 2/3 (with Volume Control) --- 2
Channel Output 3/4 (with Volume Control) --- 4
One-way Addressable ---------- 1
Without A/B Switch and Circuitry ---------- 0
With A/B Switch and Circuitry ---------- 1
With A/B Circuitry Only ---------- 2
Special Product Order (SPO) ---------- * *

STARCOM VI+ Baseband/STARFONE — FONE-Way (Type 13)


D P B B - * * * - * *
Downloadable Plus ---------- D P
Baseband ---------- B B
Channel Output 2/3 (with Volume Control) --- 2
Channel Output 3/4 (with Volume Control) --- 4
Two-way Unit via STARFONE ---------- 3
Without A/B Switch and Circuitry ---------- 0
With A/B Switch and Circuitry ---------- 1
With A/B Circuitry Only ---------- 2
Special Product Order (SPO) ---------- * *

STARCOM VI+ Baseband/STARVUE — FONE-Way (Type 14)

```
                                    DP  BB  -  *  *  *  -  * *
                                     | |  | |     |  |  |     | |
Downloadable Plus ----------------- DP  | |     |  |  |     | |
                                         | |     |  |  |     | |
Baseband ------------------------------- BB     |  |  |     | |
                                               |  |  |     | |
Channel Output 2/3 (with Volume Control) ---2  |  |     | |
Channel Output 3/4 (with Volume Control) ---4  |  |     | |
                                               |     | |
Two-way Unit via STARVUE ---------------------2     | |
                                               |     | |
Without A/B Switch and Circuitry --------------0     | |
With A/B Switch and Circuitry -----------------1     | |
With A/B Circuitry Only -----------------------2     | |
                                                     | |
Special Product Order (SPO) ------------------------ * *
```

IMPULSE 7000 — One-Way (Type 15)

```
                                  DP  *  7  *  *  *  /  * * * *  -  * *
                                   | |  |  |  |  |  |  |       |     | |
Downloadable Plus --- DP           |  |  |  |  |  |  |       |     | |
                                   |  |  |  |  |  |  |       |     | |
Without Volume Control Blank       |  |  |  |  |  |  |       |     | |
With Volume Control -------- V     |  |  |  |  |  |  |       |     | |
                                   |  |  |  |  |  |  |       |     | |
550 MHz/RF Unit ------------------ 7  |  |  |  |  |  |       |     | |
                                      |  |  |  |  |  |       |     | |
Without Volume Control ------------- 1  |  |  |  |  |       |     | |
With Volume Control ------------------ 2  |  |  |  |       |     | |
                                           |  |  |  |       |     | |
One-way Unit ------------------------------0  |  |  |       |     | |
One-way with Expansion ROM ----------1  |  |  |       |     | |
                                        |  |  |  |       |     | |
Channel 2 Output (w/out Volume Control) - 2  |  |  |       |     | |
Channel 3 Output (w/out Volume Control) - 3  |  |  |       |     | |
Channel 4 Output (w/out Volume Control) - 4  |  |  |       |     | |
Channel 2/3 Output (with Volume Control)  2  |  |  |       |     | |
Channel 3/4 Output (with Volume Control)  4  |  |  |       |     | |
                                             |  |  |       |     | |
Special Product Order (SPO) ----------------*  *  *  *     |     | |
                                                           |     | |
ROM Version Designation ------------------------------------------* *
```

IMPULSE 7000/STARFONE — FONE-Way (Type 16)

```
                                                  D P  *  7  *  *  *  /  * * * *  -  * *
                                                  | |  |  |  |  |  |     | | | |     | |
Downloadable Plus ---------------------------- D P  |  |  |  |  |     | | | |     | |
                                                    |  |  |  |  |     | | | |     | |
Without Volume Control ---------- Blank            |  |  |  |  |     | | | |     | |
With Volume Control ------------------------ V      |  |  |  |     | | | |     | |
                                                    |  |  |  |  |     | | | |     | |
550 MHz/RF Unit ------------------------------ 7    |  |  |  |     | | | |     | |
                                                    |  |  |  |  |     | | | |     | |
Without Volume Control ------------------------- 1  |  |  |     | | | |     | |
With Volume Control ---------------------------- 2  |  |  |     | | | |     | |
                                                    |  |  |  |     | | | |     | |
Two-way Unit via STARFONE ------------------------ 3  |  |     | | | |     | |
                                                    |  |  |  |     | | | |     | |
Channel 2 Output (w/out Volume Control) ------------ 2  |  |     | | | |     | |
Channel 3 Output (w/out Volume Control) ------------ 3  |  |     | | | |     | |
Channel 4 Output (w/out Volume Control) ------------ 4  |  |     | | | |     | |
Channel 2/3 Output (with Volume Control) ------------ 2  |  |     | | | |     | |
Channel 3/4 Output (with Volume Control) ------------ 4  |  |     | | | |     | |
                                                    |  |  |  |     | | | |     | |
Special Product Order (SPO) ------------------------------------------* * * *     | |
ROM Version Designation ------------------------------------------------------------* *
```

IMPULSE 7000/STARVUE — Two-Way (Type 17)

```
                                  D P   *   7   *   *   *   /   * * * *   -   * *
                                  | |   |   |   |   |   |       | | | |       | |
Downloadable Plus --- D P         |   |   |   |   |   |       | | | |       | |
                                  |   |   |   |   |   |       | | | |       | |
Without Volume Control Blank      |   |   |   |   |   |       | | | |       | |
With Volume Control -------- V    |   |   |   |   |   |       | | | |       | |
                                  |   |   |   |   |   |       | | | |       | |
550 MHz/RF Unit ------------------7   |   |   |   |       | | | |       | |
                                      |   |   |   |       | | | |       | |
Without Volume Control ------------- 1    |   |   |       | | | |       | |
With Volume Control ------------------ 2   |   |   |       | | | |       | |
                                          |   |   |       | | | |       | |
Two-way Unit via STARVUE----------------2   |   |       | | | |       | |
                                            |   |       | | | |       | |
Channel 2 Output (w/out Volume Control) - 2     |       | | | |       | |
Channel 3 Output (w/out Volume Control) - 3     |       | | | |       | |
Channel 4 Output (w/out Volume Control) - 4     |       | | | |       | |
Channel 2/3 Output (with Volume Control)  2     |       | | | |       | |
Channel 3/4 Output (with Volume Control)  4     |       | | | |       | |
                                                |       | | | |       | |
Special Product Order (SPO) ----------------------------* * * *       | |
                                                                        | |
ROM Version Designation ------------------------------------------------* *
```

IMPULSE 7000 Baseband — One-Way (Type 18)

```
                                  D P   B B   7 *   *   *   /   * * * *   -   * *
                                  | |   | |   | |   |   |       | | | |       | |
Downloadable Plus --- D P         |   | |   | |   |   |       | | | |       | |
                                  |   | |   | |   |   |       | | | |       | |
Baseband ---------------------- B B   | |   |   |       | | | |       | |
                                      | |   |   |       | | | |       | |
550 MHz/BB Unit ------------------7 3   |   |       | | | |       | |
                                        |   |       | | | |       | |
One-way Unit ------------------------------0   |       | | | |       | |
One-way with Expansion ROM ----------1   |       | | | |       | |
                                         |       | | | |       | |
Channel 2/3 Output ------------------------- 2       | | | |       | |
Channel 3/4 Output ------------------------- 4       | | | |       | |
                                                     | | | |       | |
Special Product Order (SPO) ----------------------- * * * *       | |
                                                                   | |
ROM Version Designation ------------------------------------------- * *
```

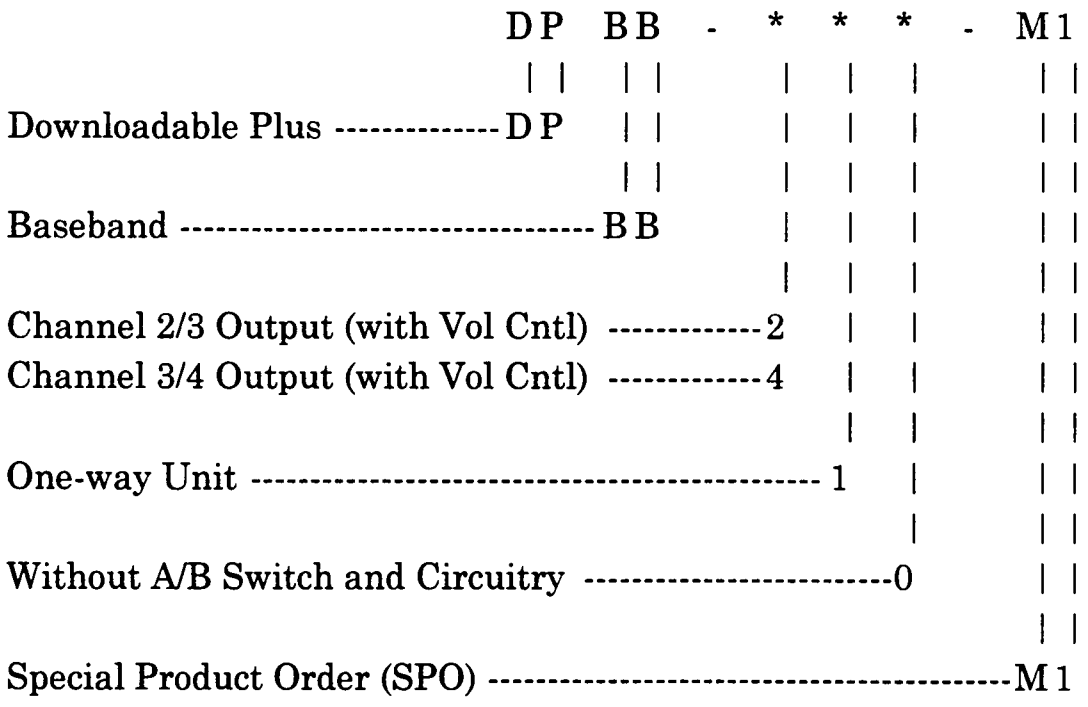
IMPULSE 7000 Baseband/STARFONE — FONE-Way (Type 19)

```
                                  D P   B B   7 *   *   *   /   * * * *   -   * *
                                  | |   | |   | |   |   |       | | | |       | |
Downloadable Plus --- D P         | |   | |   | |   |   |       | | | |       | |
                                  | |   | |   | |   |   |       | | | |       | |
Baseband ------------------------ B B   | |   | |   |   |       | | | |       | |
                                          | |   | |   |   |       | | | |       | |
550 MHz/BB Unit ---------------------7 3   |   |       | | | |       | |
                                           |   |       | | | |       | |
Two-way Unit via STARFONE ------------3    |       | | | |       | |
                                           |       | | | |       | |
Channel 2/3 Output ------------------------------ 2       | | | |       | |
Channel 3/4 Output ------------------------------ 4       | | | |       | |
                                                          | | | |       | |
Special Product Order (SPO) ----------------------------* * * *       | |
                                                                      | |
ROM Version Designation ---------------------------------------------* *
```

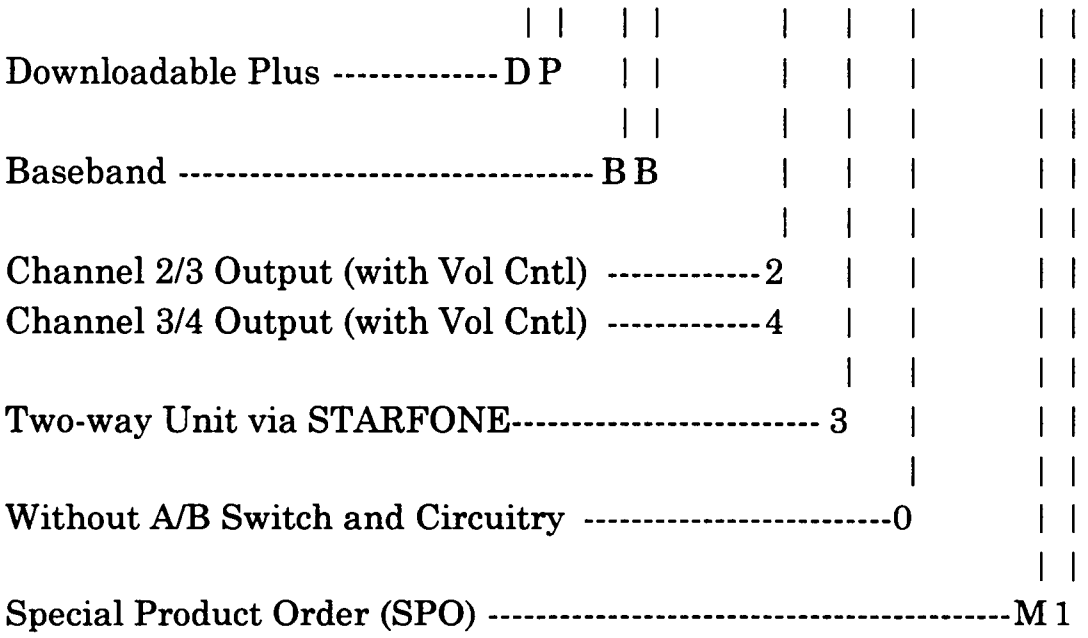
IMPULSE 7000 Baseband/STARVUE — Two-Way (Type 20)

```
                                  D P   B B   7 *   *   *   /   * * * *   -   * *
                                  | |   | |   | |   |   |       | | | |       | |
Downloadable Plus --- D P         | |   | |   | |   |   |       | | | |       | |
                                  | |   | |   | |   |   |       | | | |       | |
Baseband ------------------------ B B   | |   | |   |   |       | | | |       | |
                                          | |   | |   |   |       | | | |       | |
550 MHz/BB Unit ---------------------7 3   |   |       | | | |       | |
                                           |   |       | | | |       | |
Two-way Unit via STARVUE-------------2     |       | | | |       | |
                                           |       | | | |       | |
Channel 2/3 Output ------------------------------ 2       | | | |       | |
Channel 3/4 Output ------------------------------ 4       | | | |       | |
                                                          | | | |       | |
Special Product Order (SPO) ----------------------------* * * *       | |
                                                                      | |
ROM Version Designation ---------------------------------------------* *
```

STARCOM VI+ Baseband Master/Slave — One-Way (Type 21)


DP BB - * * * - M1
Downloadable Plus ----------DP
Baseband ----------BB
Channel 2/3 Output (with Vol Cntl) ----------2
Channel 3/4 Output (with Vol Cntl) ----------4
One-way Unit ----------1
Without A/B Switch and Circuitry ----------0
Special Product Order (SPO) ----------M1

STARCOM VI+ Baseband Master/Slave/STARFONE — FONE-Way (Type 22)


DP BB - * * * - M1
Downloadable Plus ----------DP
Baseband ----------BB
Channel 2/3 Output (with Vol Cntl) ----------2
Channel 3/4 Output (with Vol Cntl) ----------4
Two-way Unit via STARFONE----------3
Without A/B Switch and Circuitry ----------0
Special Product Order (SPO) ----------M1

STARCOM VI+ Baseband Master/Slave/STARVUE — Two-Way (Type 23)

```
                                                    D P   B B   -   *   *   *   -   M 1
                                                    | |   | |       |   |   |       | |
Downloadable Plus ----------------------------------D P   | |       |   |   |       | |
                                                          | |       |   |   |       | |
Baseband -------------------------------------------------B B       |   |   |       | |
                                                                    |   |   |       | |
Channel 2/3 Output (with Vol Cntl) ----------------------------------2   |   |       | |
Channel 3/4 Output (with Vol Cntl) ----------------------------------4   |   |       | |
                                                                        |   |       | |
Two-way Unit via STARVUE ---------------------------------------------- 2   |       | |
                                                                            |       | |
Without A/B Switch and Circuitry ------------------------------------------0       | |
                                                                                    | |
Special Product Order (SPO) ------------------------------------------------------M 1
```

International 7000 — One-Way (Type 24)

```
                                                    I   D P   7   *   1   *   /   *
                                                    |   | |   |   |   |   |       |
International ----------------------------------------I   | |   |   |   |   |       |
                                                            | |   |   |   |   |       |
Downloadable Plus ------------------------------------------- D P   |   |   |   |       |
                                                                    |   |   |   |       |
550 MHz/RF Unit ------------------------------------------------------7   |   |   |       |
                                                                        |   |   |   |       |
PAL-I ------------------------------------------------------------------ 1   |   |   |       |
PAL-B/G ---------------------------------------------------------------- 2   |   |   |       |
                                                                            |   |   |       |
One-way Unit ------------------------------------------------------------------1   |       |
                                                                                |       |
Ouput Channel - VHF ------------------------------------------------------------ 1       |
Ouput Channel - UHF (50 through 60) -------------------------------------------- 2       |
Ouput Channel - UHF (29) ------------------------------------------------------- 3       |
                                                                                        |
Data Stream - 73 MHz ------------------------------------------------------------------1
Data Stream - 122 MHz -----------------------------------------------------------------2
Data Stream - 158 MHz -----------------------------------------------------------------3
Data Stream - 302 MHz -----------------------------------------------------------------4
```

International 7000/STARFONE — FONE-Way (Type 25)

```
                                    I   DP   7   *   3   *   /   *
                                    |   | |  |   |   |   |       |
International ---------------------- I   | |  |   |   |   |       |
                                        | |  |   |   |   |       |
Downloadable Plus ------------------- DP   |   |   |   |       |
                                            |   |   |   |       |
550 MHz/RF Unit ----------------------------7   |   |   |       |
                                                |   |   |       |
PAL-I ------------------------------------------------ 1   |   |       |
PAL-B/G ---------------------------------------------- 2   |   |       |
                                                        |   |       |
Two-way Unit via STARFONE----------------------------- 3   |       |
                                                            |       |
Ouput Channel - VHF ------------------------------------------1       |
Ouput Channel - UHF (50 through 60) -------------------------2       |
Ouput Channel - UHF (29) ------------------------------------3       |
                                                                     |
Data Stream - 73 MHz ------------------------------------------------1
Data Stream - 122 MHz -----------------------------------------------2
Data Stream - 158 MHz -----------------------------------------------3
Data Stream - 302 MHz -----------------------------------------------4
```

International 7000/STARVUE — Two-Way (Type 26)

```
                                    I  DP  7  *  2  *  /  *
                                    |  | |  |  |  |  |     |
International ----------------------I  | |  |  |  |  |     |
                                       | |  |  |  |  |     |
Downloadable Plus ------------------- DP  |  |  |  |     |
                                          |  |  |  |     |
550 MHz/RF Unit ----------------------------7  |  |  |     |
                                             |  |  |     |
PAL-I ------------------------------------------1  |  |     |
PAL-B/G ----------------------------------------2  |  |     |
                                                  |  |     |
Two-way Unit via STARVUE-------------------------2  |     |
                                                     |     |
Output Channel - VHF ------------------------------------1  |
Output Channel - UHF (50 through 60) --------------------2  |
Output Channel - UHF (29) -------------------------------3  |
                                                            |
Data Stream - 73 MHz ------------------------------------------1
Data Stream - 122 MHz -----------------------------------------2
Data Stream - 158 MHz -----------------------------------------3
Data Stream - 302 MHz -----------------------------------------4
```

Digital Cable Radio — One-Way (Type 27)

```
                                    DCR  *  0 00SX  /  Y    * * * *
                                    |||  |        |     |    | | | |
Digital Cable Radio -- DCR          |  |        |     |    | | | |
                                    |  |        |     |    | | | |
Deluxe Terminal----------------4    |  |        |     |    | | | |
With Two-way IR                     |  |        |     |    | | | |
                                    |  |        |     |    | | | |
Wide Range Terminal --------3       |  |        |     |    | | | |
One-way Remote Capable              |  |        |     |    | | | |
Pulse Position Code                 |  |        |     |    | | | |
                                    |  |        |     |    | | | |
International Model (without DC) ---------I     blank  |    | | | |
International Model (with DC)-            I     D      |    | | | |
                                          |     |      |    | | | |
Domestic Model---------------------------- blank blank  |    | | | |
                                                       |    | | | |
Special Product Order (SPO) ------------------------------* * * *
```

Digital Cable Radio — FONE-Way (Type 28)

Not implemented.

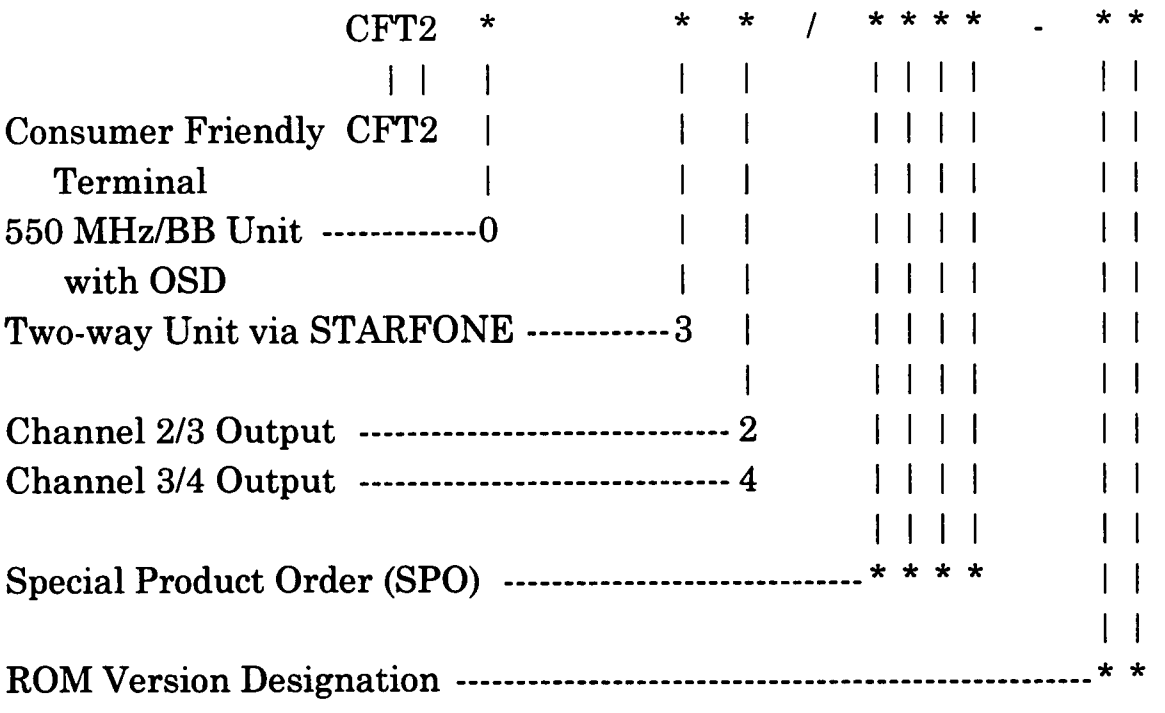
Digital Cable Radio — Two-Way (Type 29)

Not implemented.

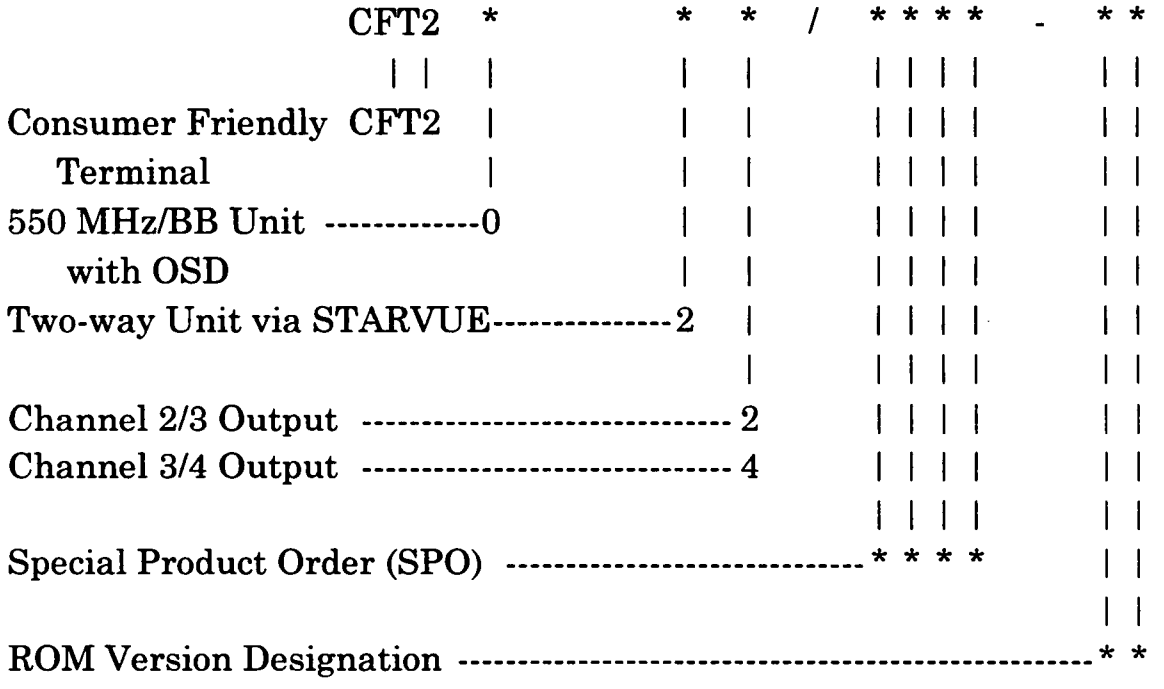
CFT-2000 — One-Way (Type 30)

```
                                CFT2  *          *   *   /   * * * *   -   * *
                                  | |  |          |   |       | | | |       | |
Consumer Friendly  CFT2           |  |          |   |       | | | |       | |
   Terminal                       |  |          |   |       | | | |       | |
550 MHz/BB Unit ------------------0  |          |   |       | | | |       | |
    with OSD                         |          |   |       | | | |       | |
One-way Unit ------------------------------------1   |       | | | |       | |
                                                     |       | | | |       | |
Channel 2/3 Output ------------------------------- 2       | | | |       | |
Channel 3/4 Output ------------------------------- 4       | | | |       | |
                                                           | | | |       | |
Special Product Order (SPO) ----------------------------- * * * *       | |
                                                                         | |
ROM Version Designation ------------------------------------------------* *
```

CFT-2000 — FONE-Way (Type 31)


CFT2 * * * / * * * * - * *
Consumer Friendly CFT2
Terminal
550 MHz/BB Unit 0
with OSD
Two-way Unit via STARFONE 3
Channel 2/3 Output 2
Channel 3/4 Output 4
Special Product Order (SPO) * * * *
ROM Version Designation * *

CFT-2000 — Two-Way (Type 32)


CFT2 * * * / * * * * - * *
Consumer Friendly CFT2
Terminal
550 MHz/BB Unit 0
with OSD
Two-way Unit via STARVUE 2
Channel 2/3 Output 2
Channel 3/4 Output 4
Special Product Order (SPO) * * * *
ROM Version Designation * *

STARPORT — One-Way (Type 33)

Addressable Control Module (ACM).

STARPORT — FONE-Way (Type 34)

Not implemented.

STARPORT — Two-Way (Type 35)

Not implemented.

Valid Wire Link Commands for Converter Types

Because there are variations in the capabilities of the different Converter Types, there are wire link commands specific to each. Use this legend to interpret the command list that begins on the following page:

Command Value	Description
Blank	Command is not valid or applicable.
Y	Command is valid.
1	Command is not affected by the Converter Type.
2	You must first add the converter to the ACC-4000 Controller in standalone mode.
3	For PROM-based converters (Converter Types 1 through 3), the initialization procedure gets treated like a change.
4	Clears the purchase key.
5	Clears the parental control key.
6	Clears both the purchase and parental control (P.C.) keys.
7	If the converter is already initialized, change to a partial initialization (refresh) so that purchases are not lost, unless parameter [61] Always Do Initialize... is set to T in the wire link configuration file.

Command	Converter Type										
	1	2	3	4	5	6	7	8	9	10	11
001 Synchronization	1	1	1	1	1	1	1	1	1	1	1
002 Controller Reset	1	1	1	1	1	1	1	1	1	1	1
060 Converter Update	Y	Y	Y	2	2	2	2	2	2	2	2
170 Converter Update Serial/Account/Others	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
260 Add Converter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
262 Change Converter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
263 Delete Converter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
264 Initialize Converter	3	3	3	Y	Y	Y	Y	7	Y	Y	7
265 Clear Purchase/ Parent Keys				4	5	6		4			4
280 Information from DB	1	1	1	1	1	1	1	1	1	1	1
284 Collect Purchases				Y		Y					Y
294 PPV By Converter ID	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
296 PPV By Serial Number	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
310 Upload Purchases				Y		Y		Y			Y
320 Pay Service Upload	1	1	1	1	1	1	1	1	1	1	1
330 Pay Service Download	1	1	1	1	1	1	1	1	1	1	1

Command	Converter Type											
	12	13	14	15	16	17	18	19	20	21	22	23
001 Synchronization	1	1	1	1	1	1	1	1	1	1	1	1
002 Controller Reset	1	1	1	1	1	1	1	1	1	1	1	1
060 Converter Update	2	2	2	2	2	2	2	2	2	2	2	2
170 Converter Update Serial/Account/Others	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
260 Add Converter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
262 Change Converter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
263 Delete Converter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
264 Initialize Converter	Y	7	7	Y	7	7	Y	7	7	Y	7	7
265 Clear Purchase/ Parent Keys		4	4	5	6	6	5	6	6	5	6	6
280 Information from DB	1	1	1	1	1	1	1	1	1	1	1	1
284 Collect Purchases			Y			Y			Y			Y
294 PPV By Converter ID	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
296 PPV By Serial Number	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
310 Upload Purchases		Y	Y		Y	Y		Y	Y		Y	Y
320 Pay Service Upload	1	1	1	1	1	1	1	1	1	1	1	1
330 Pay Service Download	1	1	1	1	1	1	1	1	1	1	1	1

Command	Converter Type											
	24	25	26	27	28	29	30	31	32	33	34	35
001 Synchronization	1	1	1	1			1	1	1	1		
002 Controller Reset	1	1	1	1			1	1	1	1		
060 Converter Update	2	2	2	2			2	2	2	2		
170 Converter Update Serial/Account/Others	Y	Y	Y	Y			Y	Y	Y	Y		
260 Add Converter	Y	Y	Y	Y			Y	Y	Y	Y		
262 Change Converter	Y	Y	Y	Y			Y	Y	Y	Y		
263 Delete Converter	Y	Y	Y	Y			Y	Y	Y	Y		
264 Initialize Converter	Y	7	7	Y			Y	7	7	Y		
265 Clear Purchase/ Parent Keys	5	6	6	5			5	6	6	5		
280 Information from DB	1	1	1	1			1	1	1	1		
284 Collect Purchases			Y						Y			
294 PPV By Converter ID	Y	Y	Y	Y			Y	Y	Y	Y		
296 PPV By Serial Number	Y	Y	Y	Y			Y	Y	Y	Y		
310 Upload Purchases		Y	Y					Y	Y			
320 Pay Service Upload	1	1	1	1			1	1	1	1		
330 Pay Service Upload	1	1	1	1			1	1	1	1		

Wire Link Fields for Converter Types

Many billing system database fields require information for some Converter Types but not for others. For example, the Autotest field must be filled in for Converter Types 5 and 6 but not for Converter Types 1 through 4.

The field list that follows uses this legend:

Field Value	Description
Blank	The field is not valid or applicable.
0	An optional field.
R	A required field.
A	An optional field. If sent, do command and initialization (add/init). For PROM-based converters (Converter Types 1 through 3), initialization gets treated like a change.
B	An optional field. If sent, do command and initialization (add/init). If the converter is already initialized, change to a partial initialize (refresh) so purchases are not lost, unless parameter [61] Always Do Initialization... is set to T in the wire link configuration file.
C	For Converter Types 5, 6, 12 through 23, and 27 through 35, the values are 1 for Yes and 2 for No. For Converter Types 24, 25, and 26, the values are 1 through 99.
1	Clears the purchase key.
2	Clears the parental key.
3	Clears the purchase and parental keys.
4	The telephone number is used to derive the telephone exchange (for example, the 674 in 12156744800). The controller stores only the telephone exchange that it uses to evenly distribute phone calls for data collection.
5	The last/favorite channel. For Converter Types 5 and 6, this field controls both last and favorite channels. For Converter Types 8 and higher, this field only controls the favorite channel.

Field Value	Description
6	The last/favorite channel, P.C. locked. For Converter Type 9, only field 5 or 6 is allowed - if both are set, P.C. locked overrides the last/favorite channel.
7	Time display/TCP. For Converter Types 5 and 6, the value is for time display. For Converter Types 8, 10, and higher, the value is for TCP.
8	The tuning type. For Converter Types 5 and 6, the values are H for harmonically related characters, S for standard, or I for incrementally related characters. For Converter Types 8 and higher, the values are H or S.
9	The purchase limit. For Converter Types 4, 6, 8, 11, 13, and 14 the maximum purchase limit is 16. For Converter Types 16, 17, 19, 20, 22, 23, 25, and 26 the maximum is 63.

Field	Converter Type										
	1	2	3	4	5	6	7	8	9	10	11
Account Number	0	0	0	0	0	0	0	0	0	0	0
Action Code (265)				1	2	3		1			1
Activate	R	R	R	R	R	R	R	R	R	R	R
Amplifier	O	O	O	O	O	O	O	O	O	O	O
Autotest					R	R					
Aux 12V Option											
Change Services *	O	O	O	O	O	O	O	O	O	O	O
Channel Map					R	R		R		R	R
Clear Both	0	0	0	0	0	0	0	0	0	0	0
Clear Events	O	O	O	O	O	O	O	O	O	O	O
Clear Subscriptions	O	O	O	O	O	O	O	O	O	O	O
Connect *	R	R	R	R	R	R	R	R	R	R	R
Converter ID	R	R	R	R	R	R	R	R	R	R	R
Converter Status	O	O	O	O	O	O	O	O	O	O	O
Converter Type	R	R	R	R	R	R	R	R	R	R	R
Deactivate *	R	R	R	R	R	R	R	R	R	R	R
Disconnect *	R	R	R	R	R	R	R	R	R	R	R
Emergency Alert					R	R					
Encoded Action Word *	R	R	R	R	R	R	R	R	R	R	R
Encoded Services	R	R	R	R	R	R	R	R	R	R	R
Encoded Tier/Levels *	R	R	R	R	R	R	R	R	R	R	R
Error Code (310)				R		R		R			R
Field Status Word 1	R	R	R	R	R	R	R	R	R	R	R
Field Status Word 2	R	R	R	R	R	R	R	R	R	R	R

*Used only for 60/170 commands.

Field	Converter Type										
	1	2	3	4	5	6	7	8	9	10	11
Frequency Map											
Hub Number	O	O	O	O	O	O	O	O	O	O	O
Initialize Converter	A	A	A	O	O	O	O	O	O	O	O
Last/Favorite Channel					5	5		5	6	5	5
Master/Slave Key											
Master/Slave Type											
No. Encoded Services	R	R	R	R	R	R	R	R	R	R	R
No. Encoded Tier/Levels *	R	R	R	R	R	R	R	R	R	R	R
Output Channel					C	C					
P.C. Locked					R	R		R	6	R	R
P.C. Morality					R	R					
Phone Index								R			
Purchases Allowed				R		R		R			R
Purchase Limit				9		9		9			9
Remote			R	R	R	R	R	R	R	R	R
Serial Number	O	O	O	R	R	R	R	R	R	R	R
Status Code				R		R		R			R
Status Word	R	R	R	R	R	R	R	R	R	R	R
Telephone Number								4			
Time Display/TCP					7	7		7		7	7
Time Zone					R	R		R		R	R
Timeout Limit				R	R	R	R	R	R	R	R
Tuning Type					8	8		8	8	8	8
Volume Control					R	R		R	R	R	R

*Used only for 60/170 commands.

Field	Converter Type											
	12	13	14	15	16	17	18	19	20	21	22	23
Account Number	O	O	O	O	O	O	O	O	O	O	O	O
Action Code (265)		1	1	2	3	3	2	3	3	2	3	3
Activate	R	R	R	R	R	R	R	R	R	R	R	R
Amplifier	O	O	O	O	O	O	O	O	O	O	O	O
Autotest												
Aux 12V Option												
Change Services *	O	O	O	O	O	O	O	O	O	O	O	O
Channel Map	R	R	R	R	R	R	R	R	R	R	R	R
Clear Both	O	O	O	O	O	O	O	O	O	O	O	O
Clear Events	O	O	O	O	O	O	O	O	O	O	O	O
Clear Subscriptions	O	O	O	O	O	O	O	O	O	O	O	O
Connect *	R	R	R	O	O	O	O	O	O	O	O	O
Converter ID	R	R	R	R	R	R	R	R	R	R	R	R
Converter Status	O	O	O	O	O	O	O	O	O	O	O	O
Converter Type	R	R	R	R	R	R	R	R	R	R	R	R
Deactivate *	R	R	R	O	O	O	O	O	O	O	O	O
Disconnect *	R	R	R	O	O	O	O	O	O	O	O	O
Emergency Alert												
Encoded Action Word *	R	R	R	R	R	R	R	R	R	R	R	R
Encoded Services	R	R	R	R	R	R	R	R	R	R	R	R
Encoded Tier/Levels *	R	R	R	R	R	R	R	R	R	R	R	R
Error Code (310)		R	R		R	R		R	R		R	R
Field Status Word 1	R	R	R	R	R	R	R	R	R	R	R	R
Field Status Word 2	R	R	R	R	R	R	R	R	R	R	R	R

*Used only for 60/170 commands.

Field	Converter Type											
	12	13	14	15	16	17	18	19	20	21	22	23
Frequency Map												
Hub Number	O	O	O	O	O	O	O	O	O	O	O	O
Initialize Converter	O	B	B	O	B	B	O	B	B	O	B	B
Last/Favorite Channel	5	5	5	5	5	5	5	5	5	5	5	5
Master/Slave Key							R	R	R	R	R	R
Master/Slave Type							R	R	R	R	R	R
No. Encoded Services	R	R	R	R	R	R	R	R	R	R	R	R
No. Encoded Tier/Levels *	R	R	R	R	R	R	R	R	R	R	R	R
Output Channel	C	C	C	C	C	C	C	C	C	C	C	C
P.C. Locked	R	R	R	R	R	R	R	R	R	R	R	R
P.C. Morality												
Phone Index		R			R			R			R	
Purchases Allowed		R	R		R	R		R	R		R	R
Purchase Limit		9	9		9	9		9	9		9	9
Remote	R	R	R	R	R	R	R	R	R	R	R	R
Serial Number	R	R	R	R	R	R	R	R	R	R	R	R
Status Code (310)		R	R		R	R		R	R		R	R
Status Word	R	R	R	R	R	R	R	R	R	R	R	R
Telephone Number		4			4			4			4	
Time Display/TCP	7	7	7	7	7	7	7	7	7	7	7	7
Time Zone	R	R	R	R	R	R	R	R	R	R	R	R
Timeout Limit	R	R	R	R	R	R	R	R	R	R	R	R
Tuning Type	8	8	8	8	8	8	8	8	8	8	8	8
Volume Control	R	R	R	R	R	R	R	R	R	R	R	R

*Used only for 60/170 commands.

Field	Converter Type											
	24	25	26	27	28	29	30	31	32	33	34	35
Account Number	O	O	O	O			O	O	O	O		
Action Code	2	3	3	2			2	3	3	2		
Activate	R	R	R	R			R	R	R	R		
Amplifier	O	O	O	O			O	O	O	O		
Autotest												
Aux 12V Option	R	R	R									
Change Services *	O	O	O	O			O	O	O	O		
Channel Map	R	R	R				R	R	R	R		
Clear Both	O	O	O	O			O	O	O	O		
Clear Events	O	O	O	O			O	O	O	O		
Clear Subscriptions	O	O	O	O			O	O	O	O		
Connect *	O	O	O	O			O	O	O	O		
Converter ID	R	R	R	R			R	R	R	R		
Converter Status	O	O	O	O			O	O	O	O		
Converter Type	R	R	R	R			R	R	R	R		
Deactivate *	O	O	O	O			O	O	O	O		
Disconnect *	O	O	O	O			O	O	O	O		
Emergency Alert												
Encoded Action Word *	R	R	R	R			R	R	R	R		
Encoded Services	R	R	R	R			R	R	R	R		
Encoded Tier/Levels *	R	R	R	R			R	R	R	R		
Error Code (310)		R	R					R	R			
Field Status Word 1	R	R	R	R			R	R	R	R		
Field Status Word 2	R	R	R	R			R	R	R	R		

*Used only for 60/170 commands.

Field	Converter Type											
	24	25	26	27	28	29	30	31	32	33	34	35
Frequency Map	R	R	R	R								
Hub Number	O	O	O	O			O	O	O	O		
Initialize Converter	O	B	B	O			O	B	B	O		
Last/Favorite Channel	5	5	5	5			5	5	5	N		
Master/Slave Key							R	R	R			
Master/Slave Type							R	R	R			
No. Encoded Services	R	R	R	R			R	R	R	R		
No. Encoded Tier/Levels *	R	R	R	R			R	R	R	R		
Output Channel	C	C	C				C	C	C	C		
P.C. Locked	R	R	R	R			R	R	R	R		
P.C. Morality												
Phone Index		R						R				
Purchases Allowed		R	R					R	R			
Purchase Limit		9	9					9	9			
Remote	R	R	R	R			R	R	R			
Serial Number	R	R	R	R			R	R	R	R		
Status Code (310)		R	R					R	R			
Status Word	R	R	R	R			R	R	R	R		
Telephone Number		4						4				
Time Display/TCP	7	7	7	7			7	7	7			
Time Zone	R	R	R	R			R	R	R	R		
Timeout Limit	R	R	R	R			R	R	R	R		
Tuning Type							8	8	8			
Volume Control	R	R	R	R			R	R	R			

*Used only for 60/170 commands.

6 • System Configuration File

Purpose

This file provides all the necessary information to set up ACC-4000 configuration for individual cable systems. For example, the file includes parameters for the following:

- Partitioning the system
- Indicating if the system is one-way, two-way RF (STARVIEW) or FONE-way (STARFONE)
- Specifying the range of Subscriber IDs to use
- Specifying the range of Service Codes to use
- Specifying the number of wire links
- Specifying how many channels to tune

The most common reasons for modifying this file are:

- Upgrading a system's capability from one-way to two-way converter support
- Adding additional wire links
- Adding or changing port characteristics

Printing the System Configuration File

The Output Disk Files utility is used to obtain a listing of the ACC-4000 system configuration file. This utility lets you direct the output to the screen or printer. Please see *Volumes II, Chapter 9, Data Files* for a description of how to perform this procedure.

The system configuration file directory is /user/acc4000/data and the filename is config.dat. Remember that UNIX® is case-sensitive and that you must enter the directory and filename in lower case letters.

Sample System Configuration File by Line Number

Due to space restrictions, the following sample system configuration file may have some lines that wrap around to a second line. Your actual configuration file lines do not wrap around in this manner. When looking at the actual file, note too that the line numbers are always represented in square brackets [ ].

Default Value	Line Number	Explanation
V06.2.0	[001]	See also release.dat for revisions. Site upgrade date: 1-APR-90
!		
1	[002]	Number of ANIC cards
1	[003]	Firmware version of ANIC cards
8	[004]	Number of 32Kbyte list maps available on ANIC
0	[005]	Packet size for transmitting lists (0=half lists, 1=64 subs, 2=full lists)
8	[006]	Maximum number of punches to process in between poll packets
1	[007]	Number of poll passes
0	[008]	Xilinx firmware version number
0	[009]	Baud rate [0 = 13.97Khz / 1 = 9.6Khz / 2 = 4.8Khz]
1	[010]	Geocode [1 to 7]
104	[011]	Sitecode [0 to 4096] ! TEMPLATE CONFIG FILE
89	[012]	Upstream frequency [IN 100 KH STEPS 8.9MH]
15	[013]	Upstream level for 2-way RF
32	[014]	Number of K subscribers per partition
64	[015]	Number of K subscribers
O	[016]	Subuse[01] - [O=one-way, T=two-way, P=STARFONE , N=not in use] 1-32768
T	[017]	Subuse[02] 32769-65536
N	[018]	Subuse[03] 65537-98304
N	[019]	Subuse[04] 98305-131072
N	[020]	Subuse[05] 131073-163840
N	[021]	Subuse[06] 163841-196608

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
N	[022]	Subuse[07] 196609-229376
N	[023]	Subuse[08] 229377-262144 (hardware range 256001-262144)
N	[024]	Subuse[09] 262145-294912
N	[025]	Subuse[10] 294913-327680
N	[026]	Subuse[11] 327681-360448
N	[027]	Subuse[12] 360449-393216
N	[028]	Subuse[13] 393217-425984
N	[029]	Subuse[14] 425985-458752
N	[030]	Subuse[15] 458753-491520
N	[031]	Subuse[16] 491521-524288 (hardware range 518145-524288)
!		Service code usage
!		[S=subscription, E=event, T=two-way event, D=DCR subscriptions, N=not used]
S	[032]	service code group 1 [1 .. 8]
S	[033]	service code group 2 [9 .. 16]
S	[034]	service code group 3 [17 .. 24]
D	[035]	service code group 4 [25 .. 32]
N	[036]	service code group 5 [33 .. 40]
N	[037]	service code group 6 [41 .. 48]
N	[038]	service code group 7 [49 .. 56]
N	[039]	service code group 8 [57 .. 64]
N	[040]	service code group 9 [65 .. 72]
N	[041]	service code group 10 [73 .. 80]
N	[042]	service code group 11 [81 .. 88]
N	[043]	service code group 12 [89 .. 96]
N	[044]	service code group 13 [97 .. 104]

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
N	[045]	service code group 14 [105 .. 112]
N	[046]	service code group 15 [113 .. 120]
N	[047]	service code group 16 [121 .. 128]
N	[048]	service code group 17 [129 .. 136]
N	[049]	service code group 18 [137 .. 144]
N	[050]	service code group 19 [145 .. 152]
N	[051]	service code group 20 [153 .. 160]
N	[052]	service code group 21 [161 .. 168]
N	[053]	service code group 22 [169 .. 176]
N	[054]	service code group 23 [177 .. 184]
N	[055]	service code group 24 [185 .. 192]
E	[056]	service code group 25 [193 .. 200]
E	[057]	service code group 26 [201 .. 208]
N	[058]	service code group 27 [209 .. 216]
N	[059]	service code group 28 [217 .. 224]
N	[060]	service code group 29 [225 .. 232]
N	[061]	service code group 30 [233 .. 240]
N	[062]	service code group 31 [241 .. 248]
N	[063]	service code group 32 [249 .. 256]
X	[064]	Default morality
GPRX----	[065]	Morality types
0	[066]	Sensitivity [0% / 25% / 50%] for parental control
F	[067]	Autotest
T	[068]	Wire Link
F	[069]	PPV link
F	[070]	Morality codes
T	[071]	One-way

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
F	[072]	Two-way
F	[073]	Old converters
F	[074]	STARVUE
F	[075]	One-way STARCOM 5
F	[076]	Two-way STARCOM 5
T	[077]	Phase35 (Starcom 450 Phase III converters present)
F	[078]	Hybrid system (for DL4/4A:T = only use tags 1-64 and 193-224)
T	[079]	Broadcast time of day at 1 minute intervals
0	[080]	Decryption key for STARCOM V
31	[081]	dse queue scan interval (minutes)(zero is *off*)
29	[082]	pay services scan interval (minutes)(zero is *off*)
27	[083]	global service code off interval (minutes)(zero is *off*)
0	[084]	broadcast decryption key interval(minutes)(zero is *off*)
0	[085]	Global reset timeout interval (minutes)(zero is *off*)
99	[086]	Number of channels [2 to 256]
T	[087]	B cable: [F = A cable only / T = A and B cables]
F	[088]	Account number allowed as keyed access
T	[089]	Display service codes on converter purchase/auth screens
3	[090]	Poll time delay between bytes
24	[091]	Init punch and reset punch delay - in clock ticks (Starcom 5)
6	[092]	Fill favorite channel delay - in clock ticks (Starcom 5)
12	[093]	Upstream Frequency change delay
255	[094]	Max poll errors before poll abort
2	[095]	Punch retries on two-way punch
T	[096]	Default connect status [T = connect/ F = disconnect]

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
2	[097]	Xmit wait time (time between list transmits, in seconds)
2	[098]	Load wait time (time between list loads, in seconds)
F	[099]	Power lite flag - For IDP7. T=light on even when power switch off
3	[100]	Default converter type - used for screen adds
F	[101]	Wirelink 3
F	[102]	Accept subscription permanently if found during event poll (data collection)
T	[103]	Map type on non-responding box poll [T = active / F = connect]
PORT01	[104]	Port 0 (0) logical name
PORT02	[105]	Port 1 (1) logical name - not used on ACC4000
PORT03	[106]	Port 2 (2) logical name
PORT04	[107]	Port 3 (3) logical name
PORT05	[108]	Port 4 (4) logical name
PORT06	[109]	Port 5 (5) logical name
PORT07	[110]	Port 6 (6) logical name
PORT08	[111]	Port 7 (7) logical name
PORT09	[112]	Port 8 (10) logical name
PORT10	[113]	Port 9 (11) logical name
PORT11	[114]	Port 10 (12) logical name
PORT12	[115]	Port 11 (13) logical name
PORT13	[116]	Port 12 (14) logical name
PORT14	[117]	Port 13 (15) logical name
PORT15	[118]	Port 14 (16) logical name
PORT16	[119]	Port 15 (17) logical name
PORT17	[120]	Port 16 (20) logical name
PORT18	[121]	Port 17 (21) logical name

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
PORT19	[122]	Port 18 (22) logical name
PORT20	[123]	Port 19 (23) logical name
PORT21	[124]	Port 20 (24) logical name
PORT22	[125]	Port 21 (25) logical name
PORT23	[126]	Port 22 (26) logical name
PORT24	[127]	Port 23 (27) logical name
PORT25	[128]	Port 24 (30) logical name
PORT26	[129]	Port 25 (31) logical name
PORT27	[130]	Port 26 (32) logical name
PORT28	[131]	Port 27 (33) logical name
PORT29	[132]	Port 28 (34) logical name
PORT30	[133]	Port 29 (35) logical name
PORT31	[134]	Port 30 (36) logical name
PORT32	[135]	Port 31 (37) logical name
TT00:	[136]	Port 0 (0) physical name not used on ACC4000
TT01:	[137]	Port 1 (1) physical name
TT02:	[138]	Port 2 (2) physical name
TT03:	[139]	Port 3 (3) physical name
TT04:	[140]	Port 4 (4) physical name
TT05:	[141]	Port 5 (5) physical name
TT06:	[142]	Port 6 (6) physical name
TT07:	[143]	Port 7 (7) physical name
TT10:	[144]	Port 8 (10) physical name
TT11:	[145]	Port 9 (11) physical name
TT12:	[146]	Port 10 (12) physical name
TT13:	[147]	Port 11 (13) physical name
TT14:	[148]	Port 12 (14) physical name

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
TT15:	[149]	Port 13 (15) physical name
TT16:	[150]	Port 14 (16) physical name
TT17:	[151]	Port 15 (17) physical name
TT20:	[152]	Port 16 (20) physical name
TT21:	[153]	Port 17 (21) physical name
TT22:	[154]	Port 18 (22) physical name
TT23:	[155]	Port 19 (23) physical name
TT24:	[156]	Port 20 (24) physical name
TT25:	[157]	Port 21 (25) physical name
TT26:	[158]	Port 22 (26) physical name
TT27:	[159]	Port 23 (27) physical name
TT30:	[160]	Port 24 (30) physical name
TT31:	[161]	Port 25 (31) physical name
TT32:	[162]	Port 26 (32) physical name
TT33:	[163]	Port 27 (33) physical name
TT34:	[164]	Port 28 (34) physical name
TT35:	[165]	Port 29 (35) physical name
TT36:	[166]	Port 30 (36) physical name
TT37:	[167]	Port 31 (37) physical name
R-----	[168]	Port 0 (0) characteristics
R-----	[169]	Port 1 (1) characteristics
R-----	[170]	Port 2 (2) characteristics
R-----	[171]	Port 3 (3) characteristics
R-----	[172]	Port 4 (4) characteristics
R-----	[173]	Port 5 (5) characteristics
R-----	[174]	Port 6 (6) characteristics
R-----	[175]	Port 7 (7) characteristics

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
R-----	[176]	Port 8 (10) characteristics
R-----	[177]	Port 9 (11) characteristics
R-----	[178]	Port 10 (12) characteristics
R-----	[179]	Port 11 (13) characteristics
R-----	[180]	Port 12 (14) characteristics
R-----	[181]	Port 13 (15) characteristics
R-----	[182]	Port 14 (16) characteristics
R-----	[183]	Port 15 (17) characteristics
R-----	[184]	Port 16 (20) characteristics
R-----	[185]	Port 17 (21) characteristics
R-----	[186]	Port 18 (22) characteristics
R-----	[187]	Port 19 (23) characteristics
R-----	[188]	Port 20 (24) characteristics
R-----	[189]	Port 21 (25) characteristics
R-----	[190]	Port 22 (26) characteristics
R-----	[191]	Port 23 (27) characteristics
R-----	[192]	Port 24 (30) characteristics
R-----	[193]	Port 25 (31) characteristics
R-----	[194]	Port 26 (32) characteristics
R-----	[195]	Port 27 (33) characteristics
R-----	[196]	Port 28 (34) characteristics
R-----	[197]	Port 30 (35) characteristics
R-----	[198]	Port 31 (36) characteristics
R-----	[199]	Port 32 (37) characteristics
45	[200]	Delay (TICS) after OSD clear message command
0	[201]	Second terminal control byte (TCB)
T	[202]	Transmit terminal control byte map

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
T	[203]	Transmit reset timeout map for 1-way subscribers
F	[204]	Transmit reset timeout map for 2-way subscribers
F	[205]	Transmit reset timeout map for phone-way subscribers
0	[206]	Measure of units for money [0 = US dollars /1 = British pounds]
T	[207]	True - US date display [MM/DD/YY]
T	[208]	True - Data base recover last uncompleted operation
3	[209]	Bytes queued in system (no delays is three) [TNA/TLE return on poll]
7860	[210]	Timeout for punch transactions (in microseconds, byte time = 786) 2-way SRT
JTCM--	[211]	Converter manufacturing sites
0	[212]	Purchases file warning limit
0	[213]	Purchases file maximum limit
0	[214]	Opinion file warning limit
0	[215]	Opinion file maximum limit
1	[216]	Log Converter Service changes to TT0: (0 = no)
100	[217]	Console hard copy flag (0=no hard copy; 1=Yes hard copy)
249000	[218]	Quality control start subscriber ID
249999	[219]	Quality control end subscriber ID
127	[220]	Firmware version checksum #1 first byte STARCOM 6+
167	[221]	Firmware version checksum #1 second byte STARCOM 6+
127	[222]	Firmware version checksum #2 first byte startrak
122	[223]	Firmware version checksum #2 second byte startrak
0	[224]	Number of parallel data streams
1234	[225]	DCR decryption key 1. Enabled by [284]
5421	[226]	DCR decryption key 2

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
1	[227]	DCR participating partition indicator. Bit mapped. Eg. 3 = partitions 1 & 2
10	[228]	Delay for verify sub (in seconds). (to throttle processor loading)
1	[229]	Verify sub functionality (0=vfy every svc in sys for each sub, 1=vfy only svcs owned by sub)
0	[230]	A/B cable commands delay tics. For types 8, 10-35. Delay after init, and after channel map segments.
10	[231]	Maximum number of archival purchases
F	[232]	Use hub to sub Sub ID allocation method (future use)
F	[233]	Cancellation during preview (6+ / startrak)
F	[234]	Pre-purchase thru TCP (6+ / startrak)
F	[235]	6+ 1:1 Global Channel Xref Map Support
T	[236]	Auto wire link Shutdown (T = enabled)
T	[237]	Transmit Subscription lists for 2-way subscribers
T	[238]	Transmit Event list for 2-way subscribers
T	[239]	Transmit TCB lists for 2-Way subscribers
F	[240]	Ignore Non-responding converters in data collection (F=try to collect purchases from non-responders anyway)
T	[241]	Time display on logon screen
F	[242]	Future use
T	[243]	Punch service code changes to two-way converters
F	[244]	Recovery mode (T= recover till entry 0 sent, F= Recover till invalid purchase sent)
F	[245]	International converter flag. Set "T" if using Convert Types 24, 25, 26.
T	[246]	Poll lower half of data base (T= (0-256K), F=(256-512K))
T	[247]	Timermode 1 way for time out (T = reset timeout resets conv timeout / F= good data packed resets conv timeout)

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
T	[248]	Timermode 2 way for time out (T = reset timeout resets conv timeout / F= good data packed resets conv timeout)
T	[249]	Timermode phone way for time out (T = reset timeout resets conv timeout / F= good data packed resets conv timeout)
f	[250]	DSEMGR switch for duplicate purchase tags (T = enabled)
5	[251]	Startrak init delay
1	[252]	Normal bypass mode/one-way event barker flag
240	[253]	Reset punch delay for 6+ converters
F	[254]	DL4A alternate authorization map (T = enabled) (Tags 129-192, 193-224)
175	[255]	Pay service maximum (1 - 1000) - not used on ACC4000
0	[256]	Global auto retune interval
0	[257]	Global service code 256 on interval
0	[258]	Number of SCXM cards
0	[259]	Minimum SCXM version number
F	[260]	Hamlin descramble for 6+ /startrak (T = enabled)
10	[261]	Autopoll: Number of day Automatic Polling results to keep (Limit = 31)
F	[262]	Autopoll: Save Individual Auto poll Bitmaps (General Instrument diagnostic user only)
T	[263]	Autopoll: Verify Automatic poll (i.e. verify fas-poll non-responders with individual polls)
F	[264]	Autopoll: Log poll messages activity file
T	[265]	Autopoll: Log error messages
T	[266]	Autopoll: Log start/stop status messages
3	[267]	Autopoll: Start poll time for Automatic poll 1 [-1 = Poll time not used, units = 0-24 by the hour]
6	[268]	Autopoll: Start poll time for Automatic poll 2 [-1 = Poll time not used, units = 0-24 by the hour]

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
9	[269]	Autopoll: Start poll time for Automatic poll 3 [-1 = Poll time not used, units = 0-24 by the hour]
12	[270]	Autopoll: Start poll time for Automatic poll 4 [-1 = Poll time not used, units = 0-24 by the hour]
15	[271]	Autopoll: Start poll time for Automatic poll 5 [-1 = Poll time not used, units = 0-24 by the hour]
18	[272]	Autopoll: Start poll time for Automatic poll 6 [-1 = Poll time not used, units = 0-24 by the hour]
15	[273]	Autopoll: Non-responding verify threshold (%) - do not verify [263] if too many boxes don't respond
F	[274]	Use dollar credit limit (startrak) (F=Events, T=$)
F	[275]	Do batch punches
1	[276]	Max number of data outlets - for hub-to-sub, max # physical ranges (subid groupings)
2	[277]	Maximum hub number - for hub-to-sub, max # hubs
0	[278]	Encryption mode, Modes = 0,1,2,3 or 4
A	[279]	Descrambling key in use (A or B)
268435455	[280]	Descrambling key A (0 - 268,435,455)
268435355	[281]	Descrambling key B (0 - 268,435,455)
1	[283]	Master/Slave timeout (hours)
F	[284]	DCR Control stream encryption enable (T= enabled, F= disabled). See also [225-226]
T	[285]	Set RF return level on init
T	[286]	Set RF return level on refresh
F	[287]	List Maintenance Flag (F=host builds complete list, T=future ANIC upgrade to build lists itself]
2	[288]	RF level increment
0	[289]	ANIC card 1 outlet - Multiple outlets not used on ACC4000
0	[290]	ANIC card 2 outlet
0	[291]	ANIC card 3 outlet
0	[292]	ANIC card 4 outlet

Default Value (cont'd)	Line Number (cont'd)	Explanation (cont'd)
0	[293]	ANIC card 5 outlet
0	[294]	ANIC card 6 outlet
0	[295]	ANIC card 7 outlet
0	[296]	ANIC card 8 outlet
1	[297]	Number of multiple I/O requests to be processed simultaneously by the DBMGR
F	[298]	LRC enabled (T= LRC byte sent in data stream after checksum byte)
T	[299]	Site code enabled (T= site code sent in data stream)
T	[300]	Limited fast poll (# of subs polled per packet, T= 64, F= 247)
0	[301]	Two-way timeout multiplier (0 - 7) - multiples of [210]. Needed for cascaded TLE's]
7	[302]	Tick delay between idload mapload calls - throttles the rate maps are loaded.
F	[303]	Reserved hardware flag
2	[304]	svh_months for number of months of data to maintain in service history file when the file is automatically purged
10	[305]	OSD message punches performed by NEWBOX task. (-1 none,>0 punch with minutes delay)
10	[306]	MM Expiration Interval (minutes)
1	[307]	MM Audit Trail Wake Up Interval (days)
30	[308]	MM Audit Trail Interval (days)

DCR Participating Partition Indicator

The DCR participating partition indicator is selected in line [227] of the system configuration file, config.dat. This parameter is an integer bit mapped value used to assign partition(s) for DCR allocation. In order to assign specified addresses to DCR terminals, the corresponding partitions must be mapped through this field. The partitions and their corresponding partition indicators are:

Partition		Partition Indicator	Partition		Partition Indicator
1	=	1	9	=	256
2	=	2	10	=	512
3	=	4	11	=	1024
4	=	8	12	=	2048
5	=	16	13	=	4096
6	=	32	14	=	8192
7	=	64	15	=	16384
8	=	128	16	=	32768

To compute the value of this parameter, add the partition indicator number corresponding to each DCR partition you want allocated. The result yields the DCR participating partition indicator. For example, to allocate partitions 3, 5, and 7 for DCR usage, the partition indicators 4, 16, and 64 are added together to yield 84.

Partition	Partition Indicator	
3	4	
5	16	
7	64	

	84	DCR participating partition indicator

The DCR participating partition indicator 84 is placed in the system configuration file on line [227]. The default value for line [227] is 0 (zero).

7 • Wire Link Configuration File

Introduction

The wire link configuration file contains the information required for the wire link to accommodate different host (billing system) interface protocols. Parts of this file are mirrored in the debug and logging option screens.

Printing the Wire Link Configuration File

Use the Output Disk Files utility to obtain a listing of your wire link configuration file. The utility lets you direct output to the screen or printer. For more information on this utility, see *Volume II, Chapter 9, Data Files.*

The directory is /usr/acc4000/data and the filename is wl1config.dat when you have only one wire link. If you have more than one wire link (a maximum of five are supported), the file names are wl1config.dat for the first, through wl5config.dat for the fifth. Remember that UNIX is case-sensitive and that you must enter the directory and filename in lower case letters.

Sample Wire Link Configuration File By Line Number

Due to space restrictions, the following sample wirelink configuration file may have some lines that wrap around to a second line. Your actual configuration file lines do not wrap around in this manner. When looking at the actual file, note too that the line numbers are always represented in square brackets [ ].

Default Value	Line (Parameter) Number	Explanation
V06.1.2 WIRE LINK VERSION NUMBER		
unix:0.0		The device (the machine where the wire link logs to)
132x015+0+190		The position and size of the wire link logging window. This will change according to user actions.
-adobe-courier-bold-r-normal--12-120-75-75-m-70-iso8859-1		Font used within the wire link logging window
xterm	[003] 1.00	CRT Port To Attach To (07 = tt7, 08 = tt10, 09 = tt11, 10 = tt12, 11 = tt13, etc)
ttya8	[004] 1.00	I/O Port To Attach To (07 = tt7, 08 = tt10, 09 = tt11, 10 = tt12, 11 = tt13, etc)
9600	[005] 1.00	Wire Link Baud Rate (4 numerics)
8	[006] 1.00	Wire Link Data Bits (5, 6, 7 or 8 --- normally "8")
N	[007] 1.00	Wire Link Parity (n for none, e for even, o for odd --- normally "n")
1	[008] 1.00	Wire Link Stop Bits (1 or 2 --- normally "1" except at 110 baud)
1	[009] 1.00	Turn Around Delay Time In Ticks (2 numerics - where 100 tics = 1 second - normally "7")

Default Value	Line (Parameter) Number	Explanation
1	[010] 1.00	Time To Wait For Next Characters Once Packet Started (4 numerics - in tics where 100 tics = 1 sec)
20	[011] 1.00	Max Time To Wait For XON After Receiving XOFF (3 numerics - in seconds)
T	[012] 1.00	Binary/HEX Encoding (always "t")
F	[013] 1.00	XON/XOFF Flow Control
T	[014] 1.00	Byte Swapping
1	[015] 1.00	Number Of Input STX Characters (0 to 4)
02		
0	[016] 1.00	Delay Between I/O Reads (in tics)
1	[017] 1.00	Number Of Input ETX Characters (1 to 4)
13		
1	[018] 1.00	Number Of Output STX Characters (0 to 4)
02		
1	[019] 1.00	Number Of Output ETX Characters (1 to 4)
13		
F	[020] -.--	Debug Option - Option 1 - *** OPEN -BOOLEAN ***
F	[021] 1.00	Debug Option - Option 2 - Dump Input Buffer On Protocol Error
F	[022] 1.00	Debug Option - Option 3 - Get Input From CRT Instead Of Wire Link (for jerrold only)
F	[023] 1.00	Debug Option - Option 4 - Dump Each Byte When Received (without pointers)
F	[024] 1.00	Debug Option - Option 5 - Dump Output Packet Before Transmission To Host
F	[025] 3.1A	Debug Option - Option 6 - Refresh Mode - Display Differences
F	[026] 3.1A	Debug Option - Option 7 - Refresh Mode - Update Differences
F	[027] 3.1A	Debug Option - Option 8 - Use "1-Second" Wire Link(s)
F	[028] 4.13	Debug Option - Option 9 - Always Do Full Change Punches
F	[029] 4.17	Debug Option - Option 10 - If PPV Module Used/Return Statuses, Wait For Actual Statuses (T)
F	[030] -.--	Debug Option - Option 11 - *** OPEN - BOOLEAN ***
F	[031] 1.00	Debug Option - Option 12 - Dump Input Packet When ETX Received
F	[032] -.--	Debug Option - Option 13 - *** OPEN - BOOLEAN ***
F	[033] 1.00	Debug Option - Option 14 - Dump Input Buffer When ETX Received
F	[034] 3.16	Debug Option - Option 15 - No Action Mode (immediately return successful to host)
F	[035] -.--	Debug Option - Option 16 - *** OPEN - BOOLEAN ***
F	[036] -.--	Logging Option - Option 1 - *** OPEN - BOOLEAN ***
T	[037] 1.00	Logging Option - Option 2 - Write Wire Link Errors (one liners) To System Console
T	[038] 1.00	Logging Option - Option 3 - Write Wire Link Transactions To Transaction File

Default Value	Line (Parameter) Number	Explanation
T	[039] 1.00	Logging Option - Option 4 - Write Wire Link Transactions To Wire Link CRT
F	[040] 1.00	Logging Option - Option 5 - Write Wire Link Transactions To Screen CRT (this crt)
F	[041] 1.00	Logging Option - Option 6 - Display Brief Format
T	[042] 1.00	Logging Option - Option 7 - Return All Wire Link Errors To Host
F	[043] 1.00	Logging Option - Option 8 - Display Brief/Brief Format
T	[044] 1.00	Logging Option - Option 9 - Misc Errors (non-critical) OK (if "f", next option must be "t")
F	[045] 1.00	Logging Option - Option 10 - Display Misc (non-critical) Errors
F	[046] -.--	Logging Option - Option 11 - *** OPEN - BOOLEAN ***
T	[047] 3.18	Logging Option - Option 12 - Use PPV Module
F	[048] 1.00	Logging Option - Option 13 - Display Current Statistics (does not reset counters)
F	[049] 1.00	Logging Option - Option 14 - Update "Purchases" File With PPV Transactions
F	[050] 1.00	Logging Option - Option 15 - Return PPV Statuses/Errors To Host (an array of "entries" size)
F	[051] 1.00	Logging Option - Option 16 - Display PPV Statuses/Errors (one line per "entry")
4	[052] 1.00	Seconds Between Checking For Wire Link Messages (2 numerics)
4	[053] 1.00	Seconds Between Returning From Host If No Input Received (2 numerics)
80	[054] 1.00	Write "W Link Running/Not Running" On Wire Link CRT Every "N" Cycles ([052] not started, [053] started)
14	[055] 1.00	Display Statistics Every "N" Minutes From 12 midnight (4 numerics, 1438 = 2 minutes to midnight)
3	[056] 1.00	Default Converter Type For Record Type 060 (can only be 1, 2, or 3)
10000	[057] 1.00	Max Lines Per Transaction File
T	[058] 1.00	Default Remote For Record Type 060 (converter type 03 only)
0	[059] 1.00	Transmit Dummy Message To Host If Nothing From Host Every "N" Cycles ([053])
F	[060] -.--	*** OPEN - BOOLEAN ***
F	[061] 1.00	Always Do Initialize (# 264) (if "f", do a partial initialize if ippv and already been initialized)
F	[062] 4.17	Special RF Converter Initialize Flag - For Jerrold Use Only
F	[063] 1.00	512k CONVID Option
F	[064] 1.00	If Activate And Deactivate Bits Not Set, Use Default Activate From Default Record
F	[065] 1.00	Already Initialized - If Converter Downloadable, Assume Already Initialized
T	[066] 1.00	Mixed System For Non-Adds (# 060)
F	[067] 1.00	Services For TCB Defined On Controller (remote, p.c. locked, etc)

Default Value	Line (Parameter) Number	Explanation
0	[068] 1.00	If Service Sent, SET Remote, Else RESET Remote
0	[069] 1.00	If Service Sent, SET P.C. Locked, Else RESET P.C. Locked
0	[070] 1.00	If Service Sent, SET Favorite Channel, Else RESET Favorite Channel
0	[071] 1.00	If Service Sent, SET Volume Control, Else RESET Volume Control
F	[072] 1.00	Delete Events When Clear Both Sent From Host (# 262, status word bit 3)
T	[073] 1.00	Display Error For RF Before Event, All After The Event
F	[074] 5.03	No Action Mode Allowed (debug option 15 [034])
F	[075] -.--	*** OPEN - BOOLEAN ***
F	[076] 1.00	Always Do Database Updates Even If No Changes
T	[077] 1.00	Always Do Punches (set "f" for host download)
F	078] -.--	*** OPEN - BOOLEAN ***
0	[079] 3.10	Max Errors Allowed For "1-Second" Wire Link - Change Commands (# 060/170/262)
0	[080] 3.16	Max Errors Allowed For "1-Second" Wire Link - PPV Commands (# 294/296)
0	[081] 3.16	Max Errors Allowed For "1-Second" Wire Link - Add Commands (# 060/170/260)
0	[082] 3.47	Max Errors Allowed For System Errors With External PPV Module (0-no limit)
F	[083] -.--	*** OPEN - BOOLEAN ***
T	[084] 3.16	Adds Allowed
T	[085] 3.16	Changes Allowed
T	[086] 3.16	Deletes Allowed
255	[087] 1.00	Assign CONVID Only In These Partitions (binary - 5 would be 1st and 3rd partitions)
F	[088] 3.16	Host Sending Purchases Allowed In Record Type 170
F	[089] 3.16	Do Not Send Any Errors Back To Host
F	[090] 3.41	Host Sending Command And Initialize Bit In Record Type 170 (adds/changes) (bit 13)
0	[091] 3.16	Host Sending Clear Keys In Record Type 170 (0= no, 1= parental, 2= purchase, 3= both)
0	[092] 3.16	Blocking Factor For Purchase Upload (0/1, 2, or 3)
1	[093] 3.41	Use Multiple Newbox Tasks (0/1=no, 2= yes)
F	[094] 4.17	Transaction File Resides in Database Directory [100,100]
T	[095] 1.00	Delete Subscriptions When Clear Both Sent From Host (# 262, status word bit 3)
T	[096] 1.00	Initialize Converter If Active = N (normally will only initialize converter if active = y)
F	[097] 1.00	Ignore 121 Error --- Service + and - / Assume + Service (for valley cable)
F	[098] 1.00	Truncate Input Serial Number To 10 Characters
0	[099] 1.00	Converter Type Mis-Match (0 - 4 same as account mis-match, 5= prom based override, no display)
0	[100] 1.00	Serial Number Mis-Match (0 - 4 same as account mis-match, 5= prom based or 1st 10 override/no display)

Default Value	Line (Parameter) Number	Explanation
0	[101] 1.00	Account Number Mis-Match (0= normal, 1= allow/prt, 2= allow/dont prt, 3= override/prt, 4= ignore bs)
T	[102] 1.00	Clear Parental And/Or Purchase Keys When Going From Active Status Of "N" To "Y"
T	[103] 1.00	Always Clear Keys When Any Valid Action Code Value Received
F	[104] 1.00	Replace Installation Date With Current Date For All Transactions (excluding refreshes)
F	[105] 1.00	PROM/Serial Number Mis-Match Processing (for foxboro)
T	[106] 1.00	Allow Preauthorization Of RF Converters
2	[107] 3.00	Wait For Punches For RF Converters (0= wait, 1= no wait, 2= no wait except non-change)
1	[108] 3.45	Database Error 105/15 Processing (0= normal, 1= display/punch, 2= no display/punch)
0	[109] 1.00	If Service Sent, SET TCP, Else RESET TCP
0	[110] 1.00	If Service Sent, SET P.C. Morality, Else RESET P.C. Morality
0	[111] 1.00	If Service Sent, SET Autotest, Else RESET Autotest
F	[112] 3.02	Host Sending Master/Slave Type
F	[113] 3.02	Host Sending Master/Slave Key
F	[114] 3.02	Host Sending Phone Index
F	[115] 3.02	Host Sending Hub Number
F	[116] -.--	*** OPEN - BOOLEAN ***
1	[117] 3.45	Invalid Service Sent By Host During PPV Command (0= normal, 1= proc/disp/punch, 2= rej/disp)
F	[118] 1.00	Treat A Package As An Event (normally treated as a subscription)
F	[119] 1.00	Host Sending Clear Subscriptions And Clear Events Bits (# 262, status word, bits 11,12)
0	[120] 3.45	Start Implicit Subscription Range (in range s/e/p -> s, out of range s/e/p -> e)
0	[121] 3.45	Stop Implicit Subscription Range (in range s/e/p -> s, out of range s/e/p -> e)
T	[122] 1.00	Display Full Error Messages (for fatal messages)
F	[123] 3.47	Host Sending Tuning Type
0	[124] 3.16	Converter Type 09 Special Processing (0= normal, 1= ignore pc, 2= ignore fc, 3= ignore both)
F	[125] 4.16	Update "Purchases" File With PPV Transactions, Avoid Duplicates (ie service already assigned)
0	[126] 4.15	Update "Purchases" File With PPV Transactions Options (0=normal, 1=1st entry, 2=1st entry after 0 convid)
0	[127] 3.1	Services To Channel Map Defined On Controller (0-disabled) (add absolute value to offset of 0)
0	[128] 3.1	Start Service To Channel Map Number (offset of 0)
0	[129] 5.07	Stop Service To Channel Map Number (specify "+" value if selecting 1st service encountered, "-" if last)
0	130] 3.14	Services To Purchasability Defined On Controller (numeric value - see write-up)
0	[131] 3.14	Service Purchasability Number (see write-up)

Default Value	Line (Parameter) Number	Explanation
0	[132] 3.14	Service Purchasability Processing (see write up)
T	[133] 3.15	Host Sending Output Channel 3
F	[134] 3.48	Use Both Services To Channel Map If Sent, If Not, use Host Values
F	[135] 3.16	Replace Installation Date With Current Date On Refresh
F	[136] 1.00	Initialize Converter When An Add From Host
	[137] 3.13	Change Initialized To "N" If IPPV And Moved "To" This Converter Status
F	[138] 1.00	Oak Protocol Mode
10	[139] 1.00	Oak Default Converter Type
T	[140] 3.16	Punch All Defined Subscriptions For STARFONE Converters
T	[141] 5.03	Refresh Mode - Write Differences To System Console
T	[142] 5.03	Refresh Mode - Write Differences To wl1trans.dat File
	[143] 3.13	Initialize Converter If Moved "From" This Converter Status
0	[144] 1.00	If Service Sent From Host, Do Initialize
F	[145] 1.00	Host Sending Refresh Bit In Encoded Action Word (# 170)/Status Word (# 262)
F	[146] 1.00	Always Do Command And Initialize (all but delete command)
T	[147] 3.10	Host Sending Record Type 284 (collect converter purchases)
F	[148] 3.11	Delete RF If Initialized To "N" (whether converter delete successful or not)
60	[149] 3.10	Maximum Records Scanned During Record Types 310 (upload restart) Or 280 (read db record)
0	[150] 3.10	Delete Processing For RF (0= rpt err/no del, 1= rpt err/del, 2= don"t rpt err/del)
F	[151] 3.10	Oak Protocol Debug Switch
0	[152] 1.00	RF Collection of Purchases (0= normal, 1= try/no err, 2= no try/no err)
2	[153] 1.00	STARFONE Collection of Purchases (0= normal, 1= no try/err, 2= no try/no err)
F	[154] 3.10	Services To Hub Number Defined On Controlle (0= disabled) (add absolute value to offset of 0)
0	[155] 3.10	Start Service To Hub Number Value (offset of 0)
0	[156] 3.10	Stop Service To Hub Number Value (specify "+" if selecting 1st service encountered, "-" if last)
F	[157] -.--	*** OPEN - BOOLEAN ***
0	[158] -.--	*** OPEN - INTEGER ***
0	[159] -.--	*** OPEN - INTEGER ***
F	[160] 3.10	Services To Phone Index Defined On Controller (0= disabled) (add absolute value to offset of 0)
0	[161] 3.10	Start Service To Phone Index Value (offset of 0)
0	[162] 3.10	Stop Service To Phone Index Value (specify "+" value if selecting 1st service encountered, "-" if last)
F	[163] 5.01	Use Old Hub to Sub Algorithm

Default Value	Line (Parameter) Number	Explanation
30	[164] 3.10	Timeout On Intertask Communication (to newbox or poll tasks)
	[165] -.--	*** OPEN - 1 CHAR *** (********** START OF 3.45 VALUES **********)
F	[166] -.--	*** OPEN - BOOLEAN ***
60	[167] 4.13	Write "System Running/Not Running" To System Console Every "N" Minutes (0 to 1439)
	[168] 3.47	Initialize Converter If Moved "To" This Converter Status
F	[169] 5.0	Initialize Converter If Account Field Changes
	[170] -.--	*** OPEN - 4 CHARS ***
F	[171] -.--	*** OPEN - BOOLEAN ***
F	[172] 3.45	Host Sending Command And Initialize Bit In Record Type 260 (add) (bit 10)
F	[173] 3.45	Host Sending Command And Initialize Bit In Record Type 262 (change) (bit 10)
T	174] 5.03	Host Sending Telephone Number
T	[175] 3.47	Host Sending Purchase Limit
T	[176] 3.47	Host Sending Timeout
T	[177] 3.47	Host Sending Emergency Alert
T	[178] 3.47	Host Sending Converter Status
T	[179] 3.47	Host Sending Channel Map
T	[180] 3.46	Host Sending Amplifier (6 characters)
F	[181] -.--	*** OPEN - BOOLEAN ***
T	[182] 5.03	Host Sending "Convert Command Into An Initialize" In Record Type 170 (bit 7)
T	[183] 5.03	Host Sending Account Number
T	[184] 3.47	Host Sending Time Zone
T	[185] 5.03	Host Sending CONVID
F	[186] 5.03	*** OPEN - BOOLEAN ***
F	[187] 5.03	*** OPEN - BOOLEAN ***
F	[188] 5.00	Host Sending Frequency Map
F	[189] 5.00	Host Sending 12V Aux
F	[190] -.--	*** OPEN - BOOLEAN ***
F	[191] 5.00	Host Sending Output Channel 3 For International Converters
T	[192] 4.13	Host Sending Purchases Allowed
F	[193] 6.11	International Converters Use Output Channel 3 (ie. 2/3, 3/4)
F	[194] 5.01	NEWBOX "update" mode (ie newbox does the db update)
F	[195] 5.01	NEWBOX "quick" mode (ie no db get)
T	[196] 3.45	Refresh Mode - Print Differences Not Controlled By [197]...[202]
T	[197] 3.45	Refresh Mode - Print Differences In Services
T	[198] 3.45	Refresh Mode - Print Differences In Account Numbers
T	[199] 3.45	Refresh Mode - Print Differences In Converter Status
T	[200] 3.45	Refresh Mode - Print Differences In Phone Index
T	[201] 3.45	Refresh Mode - Print Differences In Hub Number

Default Value	Line (Parameter) Number	Explanation
T	[202] 3.45	Refresh Mode - Print Differences In TCB
T	[203] 5.03	Refresh Mode - Print Differences In Purchase Limit, Purchases Allowed
T	[204] 5.03	Refresh Mode - Print Differences In Tuning Type, Output Channel 3, Channel Map
T	[205] 5.03	Refresh Mode - Print Differences In Amplifier
T	[206] 5.03 - Refresh Mode - Print Differences In Active, Initialized	
F	[207] -.--	Update With Current Two-Way Values On Add With-Init
F	[208] -.--	Update With Current Two-Way Values On Change-With-Init
F	[209] 3.45	Send "System Busy" To Host If Backup In Progress (error 111)
T	[210] 5.06	During Pay Service Download, Queue PPV Authorization Until PSL Is Finished
10	[211] 5.03	Close WLPSDL.DAT File "N" Minutes After Last Pay Service Download Command Received (# 330)
F	[212] -.--	Update With Current Responding Values On Change If Confiigured To Wait For Punches
T	[213] 4.13	Write All Error Messages To System Console (excluding 070 errors)
F	[214] 5.03	Write 070 Errors (convid not found) To System Console
F	[215] -.--	*** OPEN - BOOLEAN ***
F	[216] 4.12	Start Writing At The Beginning Of The wltrans.dat On Startup (else start where left off)
F	[217] 5.03	Send Host Summary Data At EOF in 311 Packet (purchase upload)
F	[218] 5.03	Send Host Summary Data At EOF in 321 Packet (pay service upload)
F	[219] 4.17	Return 396 Status/Error To Host For All Poll Errors During 284 Data Collection
	[220] -.--	*** OPEN - 6 CHARS ***
	[221] -.--	*** OPEN - 6 CHARS ***
	[222] 5.03	Clear Events If Moved "From" This Converter Status
	[223] 5.03	Clear Events If Moved "To" This Converter Status
	[224] -.--	*** OPEN - 2 CHARS ***
	[225] -.--	*** OPEN - 2 CHARS ***
0	[226] 3.45	Sync Packet Size Error Processing (0= normal, 1= >6, 2= >8 log to system console)
2	[227] 3.46	Processing For Serial No. Already Assigned (0= err/prt, 1= err/ret/prt, 2= ret/prt, 3= ret)
0	[228] 4.14	Processing For No CONVID Number (all 0's/1's) Sent By Billing System (0= normal, 1= ret err, 2= ret convid)
2	[229] 4.13	Item Checking For Record Type 330 (0= err/prt, 1=prt, 2= ignore, 3= debug file/ignore)

Default Value	Line (Parameter) Number	Explanation
0	[230] 4.13	"Write PPV Purchases To File" (logging option) (0= not allowed,1= upgrade,2= downgrade, 3= both)
F	[231] 5.06	Set Retry On Two-Way Initialization Error (error 58)
F	[232] 5.06	Set Retry On Two-Way Non-responding Error (error 72)
T	[233] 3.45	PPV Module Installed
F	[234] 5.03	Changes To Refresh Options Allowed ([025],[026])
F	[235] 5.03	Changes to Display Misc (non-critical) Errors Allowed ([045])
F	[236] 5.03	Changes To Update "Purchases" File With PPV Transactions Allowed ([049])
F	[237] 5.03	Return Purchase Operation In 311 Packet (returns blank/1/2, see write-up)
F	[238] 5.03	Set Account Number To Blanks When Blanks Sent From Host
F	[239] 5.03	Set Amplifier To Blanks When Blanks Sent From Host
F	[240] 5.03	Set Converter Status To Blanks When Blanks Sent From Host
0	[241] 4.12	Change Converter Type Group 1 - To Converter Type
0	[242] 4.12	Change Converter Type Group 1 - From Converter Type Start
0	[243] 4.12	Change Converter Type Group 1 - From Converter Type Stop
0	[244] 4.12	Change Converter Type Group 2 - To Converter Type
0	[245] 4.12	Change Converter Type Group 2 - From Converter Type Start
0	[246] 4.12	Change Converter Type Group 2 - From Converter Type Stop
0	[247] 4.12	Change Converter Type Group 3 - To Converter Type
0	[248] 4.12	Change Converter Type Group 3 - From Converter Type Start
0	[249] 4.12	Change Converter Type Group 3 - From Converter Type Stop
0	[250] 4.12	Host Sending Record Type 500 (0= normal, 1= accept/no check, 2= reject)
0	[251] 5.03	Pay Services Validation During PPV and External Module (0= normal, 1= enabled)
0	[252] 4.17	Processing For 096 Error (service already selected) During PPV (0=ignore, 1=ret/prt/err, 2=ret/prt, 3=ret)
0	[253] 4.16	Maximum Block Size For I/O Output
F	[254] 4.12	Update TCB Values With Billing System Data Regardless Of Converter Type
0	[255] 5.00	Valid DCR Service Numbers Start (if dcr only accept these services)
0	[256] 5.00	Valid DCR Service Numbers Stop (if dcr only accept these services)
F	[257] 5.03	Services To Frequency Map Defined On Controller (0= disabled) (add absolute value to offset of 0)
0	[258] 5.03	Start Services To Frequency Map (offset of 0)
0	[259] 5.03	Stop Services To Frequency Map (specify "+" value if selecting 1st service encountered, '-' if last)

Default Value	Line (Parameter) Number	Explanation
0	[260] 5.03	1st Valid Start Converter ID For This Wire Link
0	[261] 5.03	1st Valid Stop Converter ID For This Wire Link
0	[262] 5.03	2nd Valid Start Converter ID For This Wire Link
0	[263] 5.03	2nd Valid Stop Converter ID For This Wire Link
0	[264] 5.07	Initialize Converter If Change In Active Value (1= any change, 2= N to Y, 3= Y to N)
0	[265] 5.08	Minutes Between Storing Statistical Counters (0-60)
0	[266] 5.08	Minutes Between Logging 111 Errors (0-60)
0	[267] -.--	*** OPEN - INTEGER ***
0	[268] -.--	*** OPEN - INTEGER ***
0	[269] -.--	*** OPEN - INTEGER ***
T	[270] 5.07	Disable I/O When Wire Link Is "Not Running"
F	[271] 5.08	Use Alternate Protocol Field For Frequency Map (output channel map/frequency map)
F	[272] -.--	*** OPEN - BOOLEAN ***
	[273] -.--	*** OPEN - 1 CHARS ***
	[274] -.--	*** OPEN - 1 CHARS ***
	[275] -.--	*** OPEN - 2 CHARS ***
	[276] -.--	*** OPEN - 2 CHARS ***
	[277] -.--	*** OPEN - 2 CHARS ***
	[278] -.--	*** OPEN - 2 CHARS ***
	[279] -.--	*** OPEN - 6 CHARS ***
	[280] -.--	*** OPEN - 6 CHARS ***
	[281] -.--	*** OPEN - 6 CHARS ***
	[282] -.--	*** OPEN - 6 CHARS ***
0	[283] 5.04	1st Return Error Code From Start
0	[284] 5.04	1st Return Error Code From Stop
0	[285] 5.04	1st Return Error Code To
0	[286] 5.04	2nd Return Error Code From Start
0	[287] 5.04	2nd Return Error Code From Stop
0	[288] 5.04	2nd Return Error Code To
F	[289] -.--	*** OPEN - Boolean ***
0	[290] 5.09	PPV Event (294) To Channel Map Defined On Controller (0= disabled)
0	[291] 5.09	Start Event (294) To Channel Map Value (offset of 0)
0	[292] 5.09	Stop Event (294) To Channel Map Value
F	[293] 5.09	Use "Cyclical" To Channel Map (eg. if 3 then 1001 is 10, 1002 is 11, 1003 is 12, 1004 is 10)
0	[294] 5.09	"Cyclical" Value
F	[295] 5.09	Use "Add To" Existing Channel Map
0	[296] 5.09	"Add To" Start Valid Target Channel Map Range
0	[297] 5.09	"Add To" Stop Valid Target Channel Map Range
	[298] -.--	*** OPEN - 1 CHAR *** (********** START OF 5.11R4 VALUES **********)
F	[299] 5.11	Hub To Frequency Map Defined On Controller (0= disabled) (add absolute value to offset of 0)
0	[300] 5.11	Start Hub To Frequency Map (offset of 0)

Default Value	Line (Parameter) Number	Explanation
0	[301] 5.11	Stop Hub To Frequency Map
F	[302] 5.11	Hub To Channel Map Defined On Controller (0= disabled) (add absolute value to offset of 0)
0	[303] 5.11	Start Hub To Channel Map (offset of 0)
0	[304] 5.11	Stop Hub To Channel Map
0	[305]	Do (limited) Edit Checking Of Pay Service Downloads (0= normal, 1= err/ret/prt, 2= ret/prt)
#	[306]	Always Make Phone Index Equal (0-99) (# means ignore option)
#	[307]	Always Make Hub Number Equal (1-99)
#	[308]	*** OPEN - INTEGER ***
#	[309]	*** OPEN - INTEGER ***
#	[310]	Always Make Group Number Equal (0-191)
#	[311]	Always Make Sub Group 1 Equal (0-191)
#	[312]	Always Make Sub Group 2 Equal (0-191)
#	[313]	Always Make Sub Group 3 Equal (0-191)
#	[314]	Always Make Account Number Equal (not implemented)
#	[315]	Always Make Telephone Number Equal (not implemented)
#	[316]	Always Make Active Equal (Y, N)
#	[317]	Always Make Purchases Allowed Equal (Y, N)
#	[318]	Always Make Remove Equal (Y, N)
#	[319]	Always Make PC Locked Equal (Y, N)
#	[320]	Always Make PC Morality Equal (Y, N)
#	[321]	Always Make Volume Control Equal (Y, N)
#	[322]	Always Make TCP Equal (Y, N)
#	[323]	Always Make Favorite Channel Equal (Y, N)
#	[324]	Always Make Autotest Equal (not used)
#	[325]	Always Make Purchase Limit Equal (0-16 for types 4, 6, 8, 11, 13 and 14; 0-63 for greater types)
#	[326]	Always Make Timeout Equal (2-384 in increments of 2)
#	[327]	Always Make Emergency Alert Equal (16 bit binary, low order 7 bits used)
#	[328]	Always Make Tuning Type Equal (H, I, S)
#	[329]	Always Make Time Zone Equal (0-3)
#	[330]	Always Make Converter Status Equal (2 characters)
#	[331]	Always Make Channel Map Equal (1-99)
#	[332]	Always Make Output Channel 3 Equal (Y, N, 14-99 for international converters)
#	[333]	Always Make Frequency Map Equal (1-99)
#	[334]	Always Make Output Frequency Map Equal (1-99)
#	[335]	Always Make Input Frequency Map Equal (1-99)
#	[336]	Always Make 12V Aux Equal (1= off, 2= controller by a/b switch, 3= on)
#	[337]	Always Make Amplifier Equal (6 characters)
#	[338]	Host Sending Group Number 1
#	[339]	Host Sending Sub Group 1

Default Value	Line (Parameter) Number	Explanation
#	[340]	Host Sending Sub Group 2
#	[341]	Host Sending Sub Group 3
#	[342]	Host Sending Active
#	[343]	Host Sending Remote
#	[344]	Host Sending PC Locked
#	[345]	Host Sending PC Morality
#	[346]	Host Sending Volume Control
#	[347]	Host Sending TCP (time control programming)
#	[348]	Host Sending Favorite Channel
#	[349]	Host Sending Autotest
#	[350]	Host Sending Output Frequency Map
#	[351]	Host Sending Input Frequency Map
#	[352]	Host Sending Near Video On Demandd (NVOD)
#	[353]	Host Sending Electronic Program Guide (EPG)
#	[354]	Host Sending Group
#	[355]	Host Sending Subgroup 1
#	[356]	Host Sending Subgroup 2
#	[357]	Host Sending Subgroup 3
#	[358]	Purchase Limit Processing (0= normal, 1= purchasability only, 2= both)
#	[359]	Purchasability Processing (0= normal, 1= purchasability only, 2= both)
#	[360]	Purchasability Processing Purchase Limit Value (0= default)

Changing Parameters

All parameters are read on booting the system. Once booted, you must reboot the system for parameter changes to take effect. The only parameters that you can change so that they take temporary, instant effect while the system is running are the debug options and the logging options. You can make these changes through the Business System Gateway option on the Main Menu of Screen Options. Such changes remain in effect until you reboot the system or you manually change them back to their original settings.

Conventions for Parameter Field Values

Parameter fields follow these conventions:

- They are of Boolean, integer, or character type.
- The only valid values for Boolean fields are T (enable) or F (disable). The Boolean fields are also called flags.
- The only valid values for integer fields are −32767 through 32768. Integer and character fields are also called options.

- Open Boolean parameter fields are set to F. Open integer parameter fields are set to 0 (zero). Open character parameter fields are blank.

- The only valid field values are those listed with the parameter. ***Entering undocumented values into any parameter field results in failure of the ACC-4000 Controller applications to run.***

Explanation of the Parameters

This section explains the parameters in the wire link configuration file.

[003] CRT Port To Attach To (07 = tt7, 08 = ttlO, 09 = ttll, 10 = ttl2, 11 = ttl3, etc)

This parameter value specifies the input and output (I/O) port to attach the wire link CRT to.

Valid entries are:

x term = Using X-window/X-terminal.

ttya1 through ttya7 = Using serial port/terminal.

[004] I/O Port To Attach To (07 = tt7, 08 = ttl0, 09 = ttll, 10 = ttl2, 11 = ttl3, etc)

This parameter value specifies the I/O port to attach the RS-232C asynchronous serial communications cable to. See [003].

Some typical entries are ttya 8 for wire link one, ttya 7 for wire link two, and ttya 6 for wire link three.

[005] Wire Link Baud Rate (4 numerics)

This parameter value specifies the baud rate, which is the number of data bits that can be transferred per second. A character gets transmitted as ten bits; hence a baud rate of 1200 equals 1200 bits per second, or 120 characters per second.

The ten bits comprising a character are one start bit, one stop bit, and either eight data bits with no parity, or seven data bits and one parity bit. (See also [006] and [007].)

Valid entries are 300, 1200, 2400, 4800, and 9600.

[006] Wire Link Data Bits (5, 6, 7, or 8 — normally "8")

This parameter value specifies the number of data bits in the ten-bit character field.

Valid entries are 7 or 8.

[007] Wire Link Parity (n for none, e for even, o for odd — normally "n")

This parameter value specifies the parity, which must be set to N when using eight data bits in [006]. You must set the parity to E or O when using seven data bits.

Parity is the simplest form of error checking. The parity bit is set on or off depending on the bit pattern of the data and whether even or odd parity is selected. For instance, if three of the seven data bits are set on and even is selected, the parity bit is set on, yielding an even four bits turned on.

Valid entries are N, O, and E.

[008] Wire Link Stop Bits (1 or 2 — normally "1" except at 110 Baud)

This parameter value specifies the number of stop bits. It should *always* be 1 at 300 baud and above, or 2 at 110 baud only. See also parameter [005].

[009] Turn Around Delay Time In Tics (2 numerics - where 100 tics = 1 second - normally "7")

Some hosts require time to change from send mode to receive mode. This parameter value specifies the amount of time to wait for the change. The value is in tics (100 tics equal one second).

Valid entries are 0 (zero) through 900. The recommended setting is 10.

[010] Time To Wait For Next Characters Once Packet Started (4 numerics - in tics where 100 = 1 second)

Sometimes the host gets interrupted while sending data and the controller does not know if there was an interrupt, or if it lost the remainder of the data. This parameter value compensates for the interrupt. The value is in tics, where 100 tics equals one second.

Valid entries are 15 through 3000. The recommended setting is 1000, equaling ten seconds.

[011] Max Time To Wait For XON After Receiving XOFF (3 numerics - in seconds)

Sometimes the host cannot keep up with the data being sent from the controller. It then issues an XOFF (hex value 13) for the controller to stop sending data. If an XON (hex value 11) was not sent or lost in the transmission, the controller would never resume transmitting. This parameter value assures that this does not happen. The value is in seconds.

Valid entries are 1 through 20. The recommended setting is 20.

[012] Binary/HEX Encoding (always "t")

Much of the data transmitted over the wire link is binary. This data can be interpreted as start of text (STX) and end of text (ETX), thus interrupting the transmission. See [015], [017], [018] and [019]. Binary/hex encoding is a method of transmitting data employed by many modems where binary data gets converted to printable characters so that this does not happen.

Each eight bit byte of data gets transmitted and received as two characters, an ASCII representation of the hexadecimal value of that eight bits. The order of transmission of the two nibbles is most significant, then least significant.

Example: A = 41 hex gets converted to 4 + 1 = 34 + 31 hex.

The parameter value should always be set to T.

[013] XON/XOFF Flow Control

Sometimes the controller fails to keep up with the data being sent from the host. When data is about to be lost, the controller sends an XOFF (hex value 13) telling the host to pause its transmission. Once the controller processes the data, it sends an XON (hex value 11) to the host, telling it to resume data transmission.

This parameter value should always be F.

[014] Byte Swapping

All numeric values sent to the controller are 16 bits (two bytes). Most computers receive and store these two bytes in order. The most significant byte is in the high, or left-most eight bits of that 16-bit word. This flag compensates for hosts using DEC® equipment that receive and store these two bytes in reverse order.

Valid entries are:

T = Byte swapping takes place. This is normally the setting.

F = No byte swapping takes place.

[015] Number Of Input STX Characters (0 to 4)

STX consists of zero to four characters transmitted in front of the data packet sent to the controller. The controller ignores all data until receiving the STX characters. This eliminates the interpretation of static such as sign on messages, as valid data.

These STXs, ranging from decimal 0 (zero) through 255, are not considered part of the packet so are not included in length or checksum, and are not binary/hex encoded.

The input STX character sequence *cannot* be the same as the input ETX sequence.

A single line following this line is required for each STX entry where a numeric value occurs in positions one and two of that line.

Valid entries for the number of STXs are 0 (zero) through 4. Valid entries for the actual STXs are decimal 0 (zero) through 255. Input entries may be the same as output entries.

Example:

```
1   [015] Number of Input STX Characters
02
```

[016] Delay Between I/O Reads (in tics)

This parameter value designates the delay in tics, for (I/O) reads.

[017] Number Of Input ETX Characters (1 to 4)

ETX consists of one to four characters transmitted after the data packet gets sent to the controller. The controller ignores all data received after the ETX characters.

These ETXs, ranging from decimal 0 (zero) through 255, are not considered part of the packet so are not included in length or checksum, and are not binary/hex encoded.

The input STX character sequence *cannot* be the same as the input ETX sequence.

A single line following this line is required for each ETX entry where the numeric value occurs in positions one and two of that line.

Example:

Valid entries for the number of ETXs are 1 through 4. Valid entries for the actual ETXs are decimal 0 (zero) through 255. Input entries can be the same as output entries.

1 [017] Number of Input ETX Characters

13

[018] Number Of Output STX Characters (0 to 4)

STX stands for Start of Text, and consists of zero to four characters transmitted in front of the data packet sent to the host. The host ignores all data until receiving the STX characters. This eliminates the interpretation of static or sign on messages as valid data.

These STXs, ranging from decimal 0 (zero) through 255, are not considered part of the packet so are not included in length or checksum, and are not binary/hex encoded.

The output STX character sequence *cannot* be the same as the output ETX sequence.

A single line following this line is required for each STX entry where the numeric value occurs in positions one and two of that line.

Valid entries for the number of STXs are 0 (zero) through 4. Valid entries for the actual STXs are decimal 0 (zero) through 255. Input entries can be the same as output entries.

Example:

1 [018] Number of Output STX Characters

02

[019] Number Of Output ETX Characters (1 to 4)

ETX consists of one to four characters transmitted after the data packet sent to the host. The host ignores all data received after the ETX characters.

These ETXs, ranging from decimal 0 through 255, are not considered part of the packet so are not included in length or checksum, and are not binary/hex encoded.

The output STX character sequence *cannot* be the same as the output ETX sequence.

A single line following this line is required for each ETX entry where the numeric value occurs in positions one and two of that line.

Valid entries for the number of ETXs are 1 through 4. Valid entries for the actual ETXs are decimal 0 (zero) through 255. Input entries can be the same as output entries.

Example:

1 [019] Number Of Output ETX Characters

13

Lines [020] through [035] are debugging options, for use only by General Instrument personnel.

[020] Debug Option - Option 1 - * OPEN - BOOLEAN ***

This parameter value should always be F.

[021] Debug Option - Option 2 - Dump Input Buffer On Protocol Error

This parameter displays the 512-byte input buffer when there is a protocol error such as a packet time-out or checksum error.

[022] Debug Option - Option 3 - Get Input From CRT Instead Of Wire Link (for jerrold only)

This parameter simulates the host for testing the wire link software.

[023] Debug Option - Option 4 - Dump Each Byte When Received (without pointers)

This parameter displays each byte as received from the host. Although this generates a large amount of data, it helps to determine if there are any communication problems between the host your controller such as a bad modem or telephone line.

[024] Debug Option - Option 5 - Dump Output Packet Before Transmission To Host

This parameter displays the output packet, normally 12 to 157 bytes, before its transmission to the host.

[025] Debug Option - Option 6 - Refresh Mode - Display Differences

This parameter displays the differences between the host and the ACC-4000 Controller databases. Information is displayed on the ACC-4000 Controller's system console as the host sends 262 commands to the controller.

[026] Debug Option - Option 7 - Refresh Mode - Update Differences

This parameter updates the controller database when there are differences between the host and the controller database when the host sends 262 commands to the controller while refresh is turned on.

[027] Debug Option - Option 8 - Use "l-Second" Wire Link(s)

One-second processing is contingent on non-zero values for the "Maximum errors..." parameters [079], [080], and [081].

[028] Debug Option - Option 9 - Always do full change punches

In this mode, 262 commands always punch complete information to converters. This slows system throughput, since most 262 commands simply change authorizations.

[029] Debug Option - Option 10 - If PPV module used/return statuses, wait for actual statuses (T)

This parameter enables or disables waiting for results from the external PPV module and returning full status codes.

This parameter value is usually set to F.

[030] Debug Option - Option 11 - * OPEN - BOOLEAN ***

This parameter value should be F.

[031] Debug Option - Option 12 - Dump Input Packet When ETX Received

This parameter displays the input packet (from six to 157 bytes) when the ETX is received. Its main use is determining packet contents being received from the host.

[032] Debug Option - Option 13 - * OPEN - BOOLEAN***

This parameter value should always be F.

[033] Debug Option - Option 14 - Dump Input Buffer When ETX Received

This parameter displays the 512-byte input buffer on receiving the ETX. Its helps to determine whether the pointers for the start and stop of storage is correct after receiving data from the host.

[034] Debug Option - Option 15 - No Action Mode (immediately return successful to host)

This parameter is for timing tests between the host and the controller. When enabled, the controller immediately returns a successful status to the host, without doing any processing. This allows calculation of the number of transactions per hour that the host can transmit.

[035] Debug Option - Option 16 - * OPEN - BOOLEAN***

This parameter value should be F.

The setting of parameters [036] through [051] determines the default functionality of the Change Wire Link Logging Options screen. Valid entries are T to enable, and F to disable each parameter. Open parameters should always be F.

[036] Logging Option - Option 1 - *** OPEN - BOOLEAN***

This parameter value should be F.

[037] Logging Option - Option 2 - Write Wire Link Errors (one liners) To System Console

This parameter displays one line of data on the system console (line printer) for each record from the host (also called one-liners) that gets rejected. These entries help to reconcile the errors.

[038] Logging Option - Option 3 - Write Wire Link Transactions To Transaction File

This parameter writes the formatted transaction information received from and sent to the host. The wire link transaction log file stores this information. This circular file stores between 200 and 30,000 lines of transactions (one to three days worth of data) and is for reviewing the activity over that period of time. This is the same data appearing on the wire link monitor, excluding the Sync Received From Host messages.

[039] Logging Option - Option 4 - Write Wire Link Transactions To Wire Link CRT

This parameter displays the formatted transaction information received from and sent to the host on the wire link monitor. This lets you monitor the activity of the host-controller communications.

[040] Logging Option - Option 5 - Write Wire Link Transactions To Screen CRT (this crt)

This parameter displays the data that normally appears on the wire link CRT to the CRT currently being used. It is useful when you have only one CRT, or when all CRTs are being used for other purposes. When set to T, [039] must also be set to T.

[041] Logging Option - Option 6 - Display Brief Format

This parameter displays only four to seven lines of data for each transaction versus the nine to 13 lines in the full display mode. This parameter speeds up transaction processing once your system gets fully tested.

[042] Logging Option - Option 7 - Return All Wire Link Errors To Host

This parameter sends all errors found by the controller to the host instead of sending the normal one error. Contact your host personnel to determine whether this parameter value should be T or F.

[043] Logging Option - Option 8 - Display Brief/Brief Format

This parameter displays only two to three lines of data for each transaction versus the four to seven lines in the brief format. This speeds up transaction processing once your system gets fully tested.

This flag *cannot* be set to T when [041], Display Brief Format is set to F.

[044] Logging Option - Option 9 - Misc. Errors (non critical) OK (if "f", next option must be "t")

This parameter processes records as received from the host, ignoring miscellaneous status messages such as "Purchases Allowed Not Valid For Converter Type" or "Service To Upgrade Already Selected." These status messages have no effect on the validity of the controller's database.

This parameter informs the host of the validity of input for all fields on the controller. If set to F, [045] must be set to T, due to the way the controller processes data.

[045] Logging Option - Option 10 - Display Misc. (non-critical) Errors

This parameter displays the miscellaneous status messages mentioned in [044]. If enabled, the status appears on the wire link CRT and in the wire link transaction file, if enabled.

[046] Logging Option - Option 11 - * OPEN - BOOLEAN*****

This parameter should always be F.

[047] Logging Option - Option 12 - Use PPV Module

This parameter controls the use of the PPV module. It is for use in conjunction with parameter [233], PPV Module Installed. When enabled, PPV command 294 passes to the PPV manager for rapid processing.

[048] Logging Option - Option 13 - Display Current Statistics (does not reset counters)

This parameter displays the current wire link statistics on both the wire link CRT and the wire link transaction file if they are selected, and always on the line printer. The current values of the counters are not cleared. This parameter determines the activity since the last printing of the statistics.

[049] Logging Option - Option 14 - Update Purchases File With PPV Transactions

This parameter is for use with PPV commands 294 and 296. If enabled, each service upgrade/downgrade gets written to the Purchase file, which is available for upload to the host.

[050] Logging Option - Option 15 - Return PPV Statuses/Errors To Host (an array of "entries" size)

This parameter is for use with PPV commands 294 and 296. If enabled, the status of each entry in the PPV command gets transmitted to the host in a type 1 status record. When not selected and no error occurs, an OK status gets returned. When not selected and an error occurs, the status of each entry gets returned to the host.

[051] Logging Option - Option 16 - Display PPV Statuses/Errors (one line per "entry")

This parameter is for use with the PPV commands 294 and 296. If enabled, the status of each entry gets displayed on the wire link CRT and the wire link transaction file, if selected.

[052] Seconds Between Checking For Wire Link Messages (2 numerics)

This parameter value specifies the time limit in seconds for checking to see if a message was sent by the another controller application task to the wire link. It also coordinates with [054] when the wire link is not running, by controlling the frequency of displaying the Wire Link Not Running message.

Valid entries are 1 through 10.

[053] Seconds Between Returning From Host If No Input Received (2 numerics)

This parameter value specifies the time limit in seconds to return from the I/O checking routine if there is no I/O from the host. It also coordinates with [054] when the wire link is running, by controlling the frequency of displaying the Wire Link Running message.

Valid entries are 1 through 10.

[054] Write "W Link Running/Not Running" On System Console Every "N" Cycles ([052] not started, [053] started)

This parameter displays the message Wire Link Running, or Wire Link Not Running on the wire link monitor every N cycles. It is used in coordination with [052] if not started, or [053] if started.

Valid entries are 1 through 900. The recommended setting is 60.

[055] Display Statistics Every "N" Minutes From 12 midnight (4 numerics, 1438 = 2 minutes to midnight)

This parameter prints the accumulated wire link statistics since the last time the controller was booted or the last scheduled statistics were printed. The value determines the frequency of the automatic printout.

Valid entries are 0 (zero) through 1439.

Examples:

0 = The statistics are not printed. However, they are still tabulated and you can print them via logging option 13, "Display Current Statistics." When the system is booted, statistics get re-initialized.

360 = Four printouts, one each at 6 AM, noon, 6 PM, and midnight respectively.

720 = Two printouts, one at noon and one at midnight.

1438 = One printout at 23:58.

[056] Default Converter Type For Record Type 060 (can only be 1, 2, or 3)

This parameter is only valid for 060 commands, for picking up the Converter Type, which is not sent in 060 commands.

Valid entries are 1 through 3.

[057] Max Lines Per Transaction File

This parameter value determines the maximum number of lines that are put into the wltrans.dat file. Once the limit is reached, it starts back at the beginning of this circular file.

Every four lines require one block on the controller's disk. Hence 30,000 lines require 7,500 blocks of disk space. In some systems where space is tight, this number can be reduced to 10,000, the minimum recommended size.

Valid entries are 200 through 30,000.

[058] Default Remote For Record Type 060 (converter type 03 only)

This parameter is only valid for the 060 commands.

Valid entries are:

T = The remote control function is turned on for Converter Type 3, the only PROM-based converter having the remote option.

F= Remote control is turned off.

We recommend using the services to remote parameters [067] and [068] instead of setting this parameter value to T.

[059] Transmit Dummy Message To Host If Nothing From Host Every "N" Cycles ([053])

Some hosts use protocol converters that go off-line at times. The only way to get them back on-line is by issuing a message from the controller. This parameter lets you accomplish this by sending a dummy message.

When set, the cycle, is based on option [053], Seconds Between Returning From Host. For example, if the cycle is set to 6 and the seconds are set to 4, a message gets sent every 24 seconds if no transactions are received by the controller.

Valid entries are 0 (zero) through 8. The recommended setting is 0 (zero) when protocol converters are not being used, so that no dummy message gets sent back to the host..

[060] *** OPEN - BOOLEAN ***

This parameter value should always be F.

[061] Always Do Initialize (command 264) (if "f", do a partial initialize if ippv and already been initialized)

Valid entries are:

T = On receiving a converter initialization for an already initialized IPPV converter (two-way or STARFONE), the converter's purchases, if any, are lost.

F = A partial initialization gets sent to the converter, thus preserving the purchases.

[062] Special RF Converter Initialize Flag - For Jerrold Use Only

On adding a converter, the initialization state is N. On a two-way initialize that fails, the initialize state could be set to Y by using this option rather than remaining N.

[063] 512k CONVID Option

This parameter must be set when you have a 512k database, to disable edit checking for Converter ID values between 256k to 512k.

[064] If Activate And Deactivate Bits Not Set, Use Default Activate From Default Record

This flag is only valid for 060 and 170 commands. When the activate and deactivate bits are not set, the wire link assumes that the status is activate.

Valid entries are:

T = The default record for the Converter Type overrides the activate status.

F = We recommend *not* using this parameter, as the host should be sending the correct information.

[065] Already Initialized - If Converter Downloadable, Assume Already Initialized

This parameter controls whether a downloadable converter is assumed to be initialized or not when added to the database.

Valid entries are:

T = A downloadable converter is assumed to be initialized when added to the database. Use this value during a host download.

F = A downloadable converter is assumed not to be initialized (INIT=N) when added to the database.

[066] Mixed System For Non-Adds (# 060)

This parameter gets used on adding converters to the controller in a standalone mode (correct Converter Type) and the host is sending 060 commands (no Converter Type supplied). In this case, the default Converter Type from the wire link file gets used.

We recommend using parameter [099] Converter Type Mis-Match, instead of this parameter.

Valid entries are:

T = Allows the transaction to proceed, even if the converter types are different.

F = Rejects the transaction when the converter types are different.

[067] Services For TCB Defined On Controller (remote, p.c. locked, etc.)

If the host is sending services to define any or all of the terminal control block (TCB), including remote control, parental control, favorite channel, volume control, TCP, PC morality, and autotest, the wire link must know that these services are defined on the controller. The services to TCB parameters are [068], [069], [070], [071], [109], [110], and [111].

Valid entries are:

T = The wire link passes the services to the main routine for addition to the database.

F = The wire link converts the services to TCB values and then drops the service, so no further checking takes place and no errors are generated.

[068] If Service Sent, SET Remote, Else RESET Remote

When this parameter value is greater than 0 (zero), the wire link searches the services sent from the host. If sent, remote control gets set to Y; if not sent, it gets set to N. See also [067].

Valid entries are 0 (zero) through 8191.

[069] If Service Sent, SET P.C. Locked, Else RESET P.C. Locked

When this parameter value is greater than 0 (zero), the wire link searches the services sent from the host. If sent, P.C. locked gets set to Y; if not sent, it gets set to N. See also [067].

Valid entries are 0 (zero) through 8191.

[070] If Service Sent, SET Favorite Channel, Else RESET Favorite Channel

If this parameter value is greater than 0 (zero), the wire link searches the services sent from the host. If sent, favorite channel gets set to Y; if not sent, it gets set to N. See also [067].

Valid entries are 0 (zero) through 8191.

[071] If Service Sent, SET Volume Control, Else RESET Volume Control

If this parameter value is greater than 0 (zero), the wire link searches the services sent from the host. If sent, volume control gets set to Y; if not sent, it gets set to N. See also [067].

Valid entries are 0 (zero) through 8191.

[072] Delete Events When Clear Both Sent From Host (# 262, status word bit 3)

This parameter allows existing subscriptions, events, and packages to be cleared when a Clear value is sent from the host.

Valid entries are T or F.

[073] Display Error For RF Before Event, All After The Event

This parameter displays an error on receiving an upgrade or downgrade for an event that is not yet active or is over. Different actions take place, depending on the Converter Type.

Valid entries are:

T= This is the recommended setting. Event authorization errors get displayed.

F= Does not display errors when event authorization cannot be performed.

[074] No Action Mode Allowed (debug option 15 [034])

This parameter is only for use by General Instrument personnel. It is a safety feature for [034], No Action Mode, when testing host operations.

Valid entries are:

T= Lets no action mode get turned on from the wire link Change Debug screen.

F = This is the recommended setting, preventing no action mode from being turned on from the wire link Change Debug screen.

[075] Assign CONVID For PROM Based Converters

Normally, the controller expects the host to send the Converter ID for adding a PROM-based converter, as the PROM is already burned into the converter.

Valid entries are:

T= Assigns Converter IDs to unused PROM numbers. Once the PROM number gets assigned, the PROM must be burned and placed in the converter.

F = Does not assign Converter IDs to unused PROM numbers. This is the recommended setting, as problems can occur by placing PROMs in the wrong converters.

[076] Always Do Database Updates Even If No Changes

This parameter controls whether or not to update the database, regardless of whether there were changes made to the database or not.

Valid entries are:

T= Updates the database even if no changes were made. This can help to verify that the database is operating properly.

F= This is the recommended setting. The database only gets updated when there is a change.

[077] Always Do Punches (set "f" for host download)

Valid entries are:

T = For normal operation.

F = For host download, that is loading the database from the start. You *must* first disconnect the data stream from your cable plant.

[078] *** OPEN - BOOLEAN ***

This parameter value should always be F.

[079] Max Errors Allowed For "1-Second" Wire Link - Change Commands (060/170/262)

If this parameter value is greater than 0 (zero), the wire link goes into the 1-Second wire link mode, for changes only. The wire link then does initial edit checking and if there is no error, return a successful status to the host.

When errors occur, they are added to a counter that gets checked against this value. If exceeded, the wire link reverts back to normal processing for change commands.

Valid entries are 0 (zero) through 9999.

[080] Max Errors Allowed For "l-Second" Wire Link - PPV Commands (294/296)

If this value is greater than 0 (zero), the wire link will goes into the 1-Second wire link mode, for PPV only. The wire link then does initial edit checking and if there is no error, returns a successful status to the host.

When errors occur, they are added to a counter that gets checked against this value. If exceeded, the wire link reverts back to normal processing for PPV Commands.

Valid entries are 0 (zero) through 9999.

[081] Max Errors Allowed For "l-Second" Wire Link - Add Commands (060/170/260)

If this parameter value is greater than 0 (zero), the wire link goes into the 1-Second wire link mode, for adds only. The wire link then does initial edit checking and if there is no error, returns a successful status to the host. This only happens if the Converter ID is supplied for the add, otherwise it does normal processing.

When errors do occur, they are added to a counter that is checked against this value. If exceeded, the wire link reverts back to normal processing for add commands.

Valid entries are 0 (zero) through 9999.

[082] Max Errors Allowed For System Errors With External PPV Module (0-no limit)

If this value is greater than 0 (zero), the wire link uses the external PPV module for PPV only. The wire link then does initial edit checking and if there are no errors, returns a successful status to the host. When errors occur, they are added to a counter that gets checked against this value. If exceeded, the wire link reverts back to the normal internal logic for PPV commands. If the value is 0 (zero), processing always continues with the external PPV module.

[083] * OPEN - BOOLEAN *****

This parameter value should always be F.

[084] Adds Allowed

You can use this parameter during a download.

Valid entries are:

T = Add commands get accepted and acted upon.

F = Add commands get rejected. Error message 131, Record Type Not Implemented gets returned to the host.

[085] Changes Allowed

You can use this parameter during a refresh from the host. All converters should already be on the controller and hence, should only receive changes.
Valid entries are:

T = Change commands get accepted and acted upon.

F = Change commands get rejected and error message 131, Record Type Not Implemented gets returned to the host.

[086] Deletes Allowed

This parameter is useful when using the controller for inventory control and hence, the host should not send delete commands.

Valid entries are:

T = Delete commands are accepted and acted upon.

F = Any delete command received is rejected and error message 131, Record Type Not Implemented gets returned to the host.

[087] Assign CONVID Only In These Partitions (binary - 5 would be 1st and 3rd partitions)

This parameter gives the capability of restricting additions to particular partitions. This is sometimes required when you have two wire links or want to reserve a certain area for merging two databases, such as two corporations into one. The following table helps you to calculate the proper value by adding the binary values for each of the 16 partitions that you want to turn on.

Partition	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Binary	128	64	32	16	8	4	2	1
DB size	256k	224k	192k	160k	128k	96k	64k	32k

Examples:

Partition 1 = 1

Partitions 1 and 3 = 1 + 4 = 5

Partition 7 = 64

Partitions 1 through 8 =
1 + 2 + 4 + 8 + 16 + 32 + 64 + 128 = 255

Valid entries are 1 through 65535.

[088] Host Sending Purchases Allowed In Record Type 170

This parameter provides a means of enabling the purchase of events on store-and-forward converters (two-way and FONE-way) in the 170 command. The host does this by setting bit 11 in the encoded action word.

Valid entries are T or F.

[089] Do Not Send Any Errors Back To Host

This parameter is sometimes set for those hosts that either abort or go into an error loop when the ACC-4000 Controller rejects a transaction. The error is not returned to the host, but is displayed on the system console. Only the successful status gets returned to the host.

You can also use this parameter when a problem exists in a new release of the host software. You can set the value to T to minimize these problems until the host gets corrected.

Valid entries are T or F.

[090] Host Sending Command And Initialize Bit In Record Type 170 (adds/changes) (bit 13)

When bit 13, Also Perform Initialization, in the encoded action word is set, this parameter enables initialization punches along with the appropriate changes for sending to the converter in the 170 command.

Valid entries are T or F.

[091] Host Sending Clear Keys In Record Type 170 (0= no, 1= parental, 2= purchase, 3= both)

This parameter provides a means of clearing the parental or purchase keys in the 170 command. The host requests this by setting bit 12, in the encoded action word.

Bit 12 of the encoded action word must be set before any action takes place. Valid entries are:

0 = Normal, the request is ignored.

1 = Clears the parental key.

2 = Clears the purchase key.

3 = Clears both keys.

Any transaction sent to the wire link with this parameter set to 0 (zero) and bit 12 set only does the clear keys. Any additional information in the command gets ignored.

[092] Blocking Factor For Purchase Upload (0/1, 2 or 3)

This parameter reduces the transaction time for the purchase upload command and response pair (310, Upload Purchase Data and 311, Purchase Data). Check with your host to see what blocking factor they support.

Valid entries are:

0 = This value gets treated as a 1.

1 = This is the normal blocking factor for the purchase upload command, meaning that one purchase gets sent to the host in each 311 response transmission.

2 = Sends two purchases to the host in each 311 response transmission, cutting the upload transaction time by almost 50 percent.

3 = Provides a blocking factor of three, reducing the transmission time by almost 66 percent.

[093] Use Multiple Newbox Tasks (0/1= no, 2= yes)

This parameter enables some parallel processing in the controller when communicating with converters.

Valid entries are:

0 = Function is disabled.

1 = Function is disabled.

2 = Enables the use of multiple Newbox tasks.

[094] Transaction File Resides in Database Directory [100,100]

This parameter is not applicable to your ACC-4000 Controller.

[095] Delete Subscriptions When Clear Both Sent From Host (# 262, status word bit 3)

This parameter allows current subscriptions to be removed from converters when being updated by the host.

Valid entries are T or F.

[096] Initialize Converter If Active = N (normally will only initialize converter if active = y)

Valid entries are:

T = Lets the host initialize converters, even when not active.

F = Lets the host initialize only active converters.

[097] Ignore 121 Error — Service + and - / Assume + Service (for valley cable)

Under normal conditions, the host sends a service number once during a transaction. For instance, if the host sends five services, the services sent could be 1, 2, 3, 4, and 5. Some hosts send the same service more than once during a transaction — in this case, the above example could be 1, 2, 3, 5, and 2 (where 2 gets sent twice). Duplicate services can be upgrades or downgrades — which this parameter compensates for.

Valid entries are:

T = When duplicate services are sent, where one is an upgrade, the other is a downgrade, the wire link ignores the downgrade.

F = Duplicate services are processed.

[098] Truncate Input Serial Number To 10 Characters

Valid entries are:

T = Two blanks are inserted into positions 11 and 12 of the Serial Number sent by the host.

F = No action.

[099] Converter Type Mis-Match (0 - 4 same as account mis-match, 5= prom based override, no display)

Valid entries are:

0 = Processes the Converter Type with normal error checking.

1 = Allows the Converter Type to pass even though there is an error. An error message gets generated.

2 = Allows the Converter Type to pass even though there is an error. No error message gets generated.

3 = Uses the Converter Type sent by the host. An error message gets generated.

4 = Ignores the Converter Type sent by the host by using the default $. No error message gets generated.

5 = PROM-based override. No error message gets generated.

Entries greater than 0 (zero) *do not* send back an error message to the host.

[100] Serial Number Mis-Match (0 - 4 same as account mis-match, 5= prom based or 1st 10 override/no display)

Valid entries are:

0 = Processes the Serial Number with normal error checking.

1 = Allows the Serial Number to pass though there is an error. An error message gets generated.

2 = Allows the Serial Number to pass though there is an error. No error message gets generated.

3 = Uses the Serial Number sent by the host. An error message gets generated.

4 = Ignore the Serial Number sent by the host by using the default $. No error message gets generated.

5 = Uses the first ten characters sent by the host, but overrides this for PROM-based converters. No error message gets generated.

Entries greater than 0 (zero) *do not* send back an error message to the host.

[101] Account Number Mis-Match (0= normal, 1= allow/prt, 2= allow/dont prt, 3= override/prt, 4= ignore bs)

Within the parameter, prt stands for print, and bs stands for billing system (host).

Valid entries are:

0 = Processes the Account Number with normal error checking.

1 = Allows the Account Number to pass though there is an error. An error message gets generated.

2 = Allows the Account Number to pass though there is an error. No error message gets generated.

3 = Uses the Account Number sent by the host. An error message gets generated.

4 = Ignores the Account Number sent by the host by using the default $. No error message gets generated.

Entries greater than 0 (zero) *do not* send an error message back to the host.

[102] Clear Parental And/Or Purchase Keys When Going From Active Status Of "N" To "Y"

Valid entries are:

T = Either the parental or both keys get cleared, depending on the Converter Type, when the active status changes from N to Y.

F = No action.

[103] Always Clear Key When Any Valid Action Code Value Received

This parameter determines the type of edit checking performed when a clear keys (record type 265) is received from the host.

Valid entries are:

T = No check is made to see if the values sent from the host are valid. Any valid field is cleared, depending on the Converter Type. Parental key = 1, purchase key = 2, and clear both = 3.

F = A check is made to see if the values sent from the host are valid.

[104] Replace Installation Date With Current Date For All Transactions (excluding refreshes)

Valid entries are:

T = Uses the current date when there is a change made to that converter's database instead of retaining the installation date.

F = Retains the installation date.

[105] PROM/Serial Number Mis-Match Processing (for foxboro)

Valid entries are:

T = Overrides the Serial Number with the value sent by the host if the converter is PROM-based (Converter Type 1, 2 or 3).

F = No override.

[106] Allow Pre-Authorization Of RF Converters

This parameter controls whether or not authorizations for events for RF two-way converters result in an error code. A service that is not active does not get punched. On becoming active, the authorization lists authorize a converter. In the case of type T services, the list is not transmitted.

Valid entries are T or F.

[107] Wait For Punches For RF Converters (0= wait, 1= no wait, 2= no wait except non-change)

This parameter controls the verification portion of the two-way punch, where wait means to do the verify and no wait means not to wait for the verify before returning to the host. To enable this option, the controller must have the SCX hardware for supporting the global cycle.

Valid entries are:

0 = Waits for the verify before returning to the host.

1 = Does not wait for the verify before returning to the host.

2 = Does not wait except non-change (wait for initialize or clear purchase and parental keys).

The recommended setting is 2, even if your site is not two-way.

[108] Database Error 105/15 Processing (0= normal, 1= display/punch, 2= no display/punch)

This parameter controls whether or not a punch is generated when the wire link encounters a 105/15 database error (invalid pay service).

Valid entries are:

0 = Normal operation.

1 = Displays an error and punches existing authorizations to the converter.

2 = Does not display an error and punches information to the converter.

The recommended setting is 1.

[109] If Service Sent, SET TCP, Else RESET TCP

If this parameter value is greater than 0 (zero), the wire link searches the services sent from the host. If sent, the time display/TCP gets set to Y; if not sent, it gets set to N.

See also [067].

Valid entries are 0 (zero) through 8191.

[110] If Service Sent, SET P.C. Morality, Else RESET P.C. Morality

If this value is greater than 0 (zero), the wire link searches the services sent from the host. If sent, P.C. morality gets set to Y; if not sent, it gets set to N.

See also [067].

Valid entries are 0 (zero) through 8191.

[111] If Service Sent, SET Autotest, Else RESET Autotest

If this value is greater than 0 (zero), the wire link searches the services sent from the host. If sent, autotest gets set to Y; if not sent, it gets set to N.

See also [067].

Valid entries are 0 (zero) through 8191.

[112] Host Sending Master/Slave Type

This parameter provides a means to ignore data being sent from a host in the master/slave type packet field if it is invalid. You can view this data on the wire link CRT by turning Options 6 and 8 (Display Brief Format and Display Brief/Brief Format) off on the Change Wire Link Logging Options screen. Data is disregarded if parameters [157] and [159], start and stop master/slave type number, are set.

Valid entries are:

T = Accepts the value sent by the host, assuming that it is valid and passes the edit checking.

F = Ignores the value sent by the host, and substitutes it with a $ (the same as the old or default value).

[113] Host Sending Master/Slave Key

This parameter provides a means to ignore data being sent from a host in the master/slave key packet field if it is invalid.

Valid entries are T or F.

[114] Host Sending Phone Index

This parameter provides a means to ignore data being sent from a host in the phone index field if it is invalid. Data is disregarded if parameters [161] and [162], start and stop phone index number, are set.

Valid entries are T or F.

[115] Host Sending Hub Number

This parameter provides a means to ignore data being sent from a host in the hub number field if it is invalid.

Valid entries are T or F.

[116] *** OPEN- BOOLEAN ***

This parameter value should always be F.

[117] Invalid Service Sent By host During PPV Command (0= normal, 1= proc/disp/punch, 2= rej/disp)

This parameter determines the action taken by the wire link when a non-existent pay service is a PPV 294 or 296 command.

Valid entries are:

0 = Does not display error messages and rejects the request.

1 = Displays error message 109 and processes the transaction, excluding the service but performing punches.

2 = Displays and returns error message 109 to the host, rejects the transaction, and does not perform any punches.

The recommended setting is 1.

[118] Treat A Package As An Event (normally treated as a subscription)

This parameter controls whether a package is treated as a subscription or as an event with respect to being cleared when a change command is received from the host.

Valid entries are T or F.

[119] Host Sending Clear Subscriptions And Clear Events Bits (# 262, status word, bits 11,12)

This parameter ignores data being sent if the host sends the clear subscriptions and clear events bits in the change command.

Valid entries are T or F.

[120] Start Implicit Subscription Range (in range s/e/p -> s, out of range s/e/p -> e)

Parameters [120] and [121] determine the range of service numbers that the wire link considers to be subscriptions; if outside the range, they are considered to be events.

Valid entries are 0 (zero) through 8191.

[121] Stop Implicit Subscription Range (in range s/e/p -> s, out of range s/e/p -> e)

See [120].

Valid entries are 0 (zero) through 8191.

[122] Display Full Error Messages (for fatal messages)

If a status 119 (invalid Converter ID format) occurs, there are two different formats for reporting the error.

Valid entries are:

T = The long format gets used, printing all possible causes of the problem along with some corrective action. This results in some 10 to 15 lines of text on the line printer.

F = The normal errors are printed.

The recommended setting is T.

[123] Host Sending Tuning Type

This parameter provides a means to ignore data being sent from a host in the tuning type field if it is invalid.

Valid entries are T or F.

[124] Converter Type 09 Special Processing (0= normal, 1= ignore pc, 2= ignore fc, 3= ignore both)

Converter Type 9 can do parental control (PC) or favorite channel (FC), but not both. If both are sent by the host, the converter is be authorized for both — in this case, PC overrides FC. You may want special control of these converters via the controller, while the host controls the rest of the converters.

Valid entries are:

0 = Normal processing (parental control is Yes or No, and favorite channel is Yes or No).

1 = Ignores parental control if sent by the host.

2 = Ignores favorite channel if sent by the host.

3 = Ignores both values sent by the host.

[125] Update Purchases File With PPV Transactions, Avoid Duplicates (ie service already assigned)

When the PPV module authorizes a service and the event is added to the Purchase file, this option can prevent duplicate entries if the account already has the service. This parameter works in conjunction with parameter [49].

Valid entries are T or F.

[126] Update "Purchases" File With PPV Transactions Options (0=normal, 1=1st entry, 2=1st entry after 0 convid)

When the PPV module authorizes a service and the host sends unique accounts separated by a 0 (zero) entry (for example, three converters in a house are sent as the first three entries in the 294 command), then the first Converter ID after the separator is added to the Purchase file, not the second and third, that are commonly called additional outlets.

Valid entries are T or F.

[127] Services To Channel Map Defined On Controller (0-disabled) (add absolute value to offset of 0)

Parameters [127], [128], and [129] let you control the converter's channel map using service numbers. This is required if the host does not support the channel map field, or host control of the channel map is not appropriate in a particular situation.

Valid entries are 0 (zero) through 8191.

[128] Start Service To Channel Map (offset of 0)

See [127].

Valid entries are 0 (zero) through 8191.

[129] Stop Service To Channel Map (specify "+" value if selecting 1st service encountered, "-" if last)

See [127].

Valid entries are 0 (zero) through 8191.

[130] Services To Purchasability Defined On Controller (numeric value - see write-up)

Parameters [130], [131], and [132] let you control the converter's purchasability using service numbers. This is required if the host does not support the purchasability field, or host control of purchasability is not appropriate in a particular situation.

Valid entries are:

0 (zero) = After processing [131], delete the service from the services sent from the host.

1 = After processing [131], keep the service in the Converter ID account.

[131] Service Purchasability Number (see write-up)

See [130]. This parameter defines the service, when sent, to enable purchasability for an impulse converter.

Valid entries are 1 through 8191.

[132] Service Purchasability Processing (see write-up)

This parameter is not yet implemented.

[133] Host Sending Output Channel 3

This parameter provides a means to ignore data being sent from a host in the output channel 3 field if it is invalid.

Valid entries are T or F.

[134] Use Both Services To Channel Map If Sent, If Not, use Host Values)

In rare circumstances, a host may send a service that defines a channel map and at the same time send a channel map in the packet field. This parameter indicates that both are valid, giving precedence to the service-to-channel map value.

[135] Replace Installation Date With Current Date On Refresh

Valid entries are:

T = The installation date is updated with the current date during a refresh.

F = The installation date is not updated.

Also see [104].

[136] Initialize Converter When An Add From Host

This parameter allows initialization of a converter when an add is performed on the ACC-4000 Controller.

Valid entries are T or F.

[137] Change Initialized To "N" If IPPV And Moved "To" This Converter Status

This parameter controls when a converter is moved to a particular status, changing the initialize field on the controller's database from a Y to a N. This is sometimes done so that if an initialize command is received, a full initialize takes place instead of a partial one. This assures that if the converter has purchases, they are removed. The status is the two-character converter status sent by the host.

Valid entries are a two-character converter status.

[138] Oak Protocol Mode

Valid entries are:

T = The wire link accepts Oak format commands only. Any other type of transactions are rejected.

F = Ignores Oak format commands.

[139] Oak Default Converter Type

This parameter value determines the Converter Type for the Oak format only, and must be used with parameter [138].

Valid entries are 1 through 35.

[140] Punch All Defined Subscriptions For STARFONE Converters

This parameter is not yet implemented.

[141] Refresh Mode - Write Differences To System Console

During refresh mode processing, this parameter can control the amount of information being displayed on the console. If there are changes, differences are displayed.

Valid entries are T or F.

[142] Refresh Mode - Write Differences To wl1trans.dat File

During refresh mode processing of a change, differences are written to the wl1trans.dat file. This parameter controls the amount of information written to the file.

Valid entries are T or F.

[143] Initialize Converter If Moved "From" This Converter Status

This parameter controls when a converter is moved from a particular status, if the wire link does an initialize along with the requested change and initialize command. See also [168], Initialize Converter If Moved "To" This Converter Status.

Valid entries are two alphanumeric characters.

[144] If Service Sent From Host, Do Initialize

This parameter controls when a particular service is sent by the host, if the wire link does an initialize along with the requested add or change command.

Be sure to remove this service from the host side or the converter continues to be initialized on all subsequent commands to that converter.

Valid entries are 0 (zero) through 8191.

[145] Host Sending Refresh Bit In Encoded Action Word (170)/Status Word (# 262)

This parameter pertains to those systems where the host supports the refresh mode, either in the 170 add/change/delete command or the 262 change command. It assures the wire link that, if a value is present in the field, it is a valid refresh, and not an undefined field on the host side.

Valid entries are:

T = Checks to see if the host sends the refresh bits and if so, goes into the refresh mode.

F = Ignores the refresh bits sent by the host.

[146] Always Do Command And Initialize (all but delete command)

This parameter controls whether commands received by the wire link for a particular converter (excluding deletes) perform an initialization of the converter.

Valid entries are T or F.

[147] Host Sending 284 Command (collect converter purchases)

This parameter pertains to two-way systems, where the host issues a 284 command, Collect Converter Purchases. This can be done if a converter exceeds the number of purchases allowed or when a disconnect occurs.

Valid entries are T or F

[148] Delete RF If Initialized To "N" (whether converter delete successful or not)

This flag pertains to two-way systems doing deletes of two-way converters. Normally, when a delete is issued for a two-way converter that is not responding, the delete is not done.

Valid entries are:

T = If the converter does not respond, check to see if it is initialized. If the converter is not initialized, it is deleted.

F = Do not delete the converter if it does not respond.

[149] Maximum Records Scanned During Record Types 310 (upload restart) Or 280 (read db record)

This parameter controls the restart function on a read database or purchase upload command. If the host is in the process of an upload, and is aborted for example at record number 500, it can restart at record number 501. If the wire link tries to read 500 records to get to record 501, it will probably exceed the time-out on the host side. This parameter allows the wire link to only read a portion of the database so that the host does not time out.

Valid entries are 0 (zero) through 9999.

The recommended setting is 60, which takes approximately six seconds to perform.

[150] Delete Processing For RF (0= rpt err/no del, 1= rpt err/del, 2= don't rpt err/del)

Normally, on receiving a delete for an RF converter, a check is made to see if the converter is responding. If so, the converter is deleted. If not, it is not deleted, and a message to that effect is printed on the system console and sent to the host.

Valid entries are:

0 = Reports the error, but does not delete the converter.

1 = Reports the error and deletes the converter.

2 = Does not report the error and deletes the converter.

[151] Oak Protocol Debug Switch

For use by General Instrument personnel only.

The parameter value should always be F.

[152] RF Collection Of Purchases (0= normal process, 1= try/no err, 2= no try/no err)

This parameter defines the type of data collection from two-way converters that takes place when a Collect Purchases Command (284) is received from the host.

Valid entries are:

0 = Normal processing for a 284 command.

1 = Tries to collect the purchases; the outcome does not matter - a successful status is always returned.

2 = Does not try to collect the purchases; a successful status is returned.

[153] STARFONE Collection Of Purchases (0= normal process, 1= no try/err, 2= no try/no err)

This parameter is not yet implemented.

[154] Services To Hub Number Defined On Controller (0= disabled) (add absolute value to offset of 0)

Parameters [154], [155], and [156] let you control the converter's Hub Number using Service Numbers. This is required if the host does not support the Hub Number field, or host control of the Hub Number is not appropriate in a particular situation.

Valid entries are T or F.

[155] Start Service To Hub Number Value (offset of 0)

See [154].

Valid entries are 0 (zero) through 8191.

[156] Stop Service To Hub Number Value (specify "+" if selecting first service encountered, "-" if last)

See [154].

Valid entries are 0 (zero) through 8191.

[157] * OPEN - BOOLEAN *****

This parameter value should always be F.

[158] * OPEN - INTEGER *****

This parameter value should always be 0 (zero).

[159] * OPEN - INTEGER *****

This parameter value should always be 0 (zero).

[160] Services To Phone Index Defined On Controller (0= disabled) (add absolute value to offset of 0)

Parameters [160], [161], and [162] let you control the converters' Phone Index Numbers using Service Numbers. This is required if the host does not support the Phone Index Number field, or host control of the Phone Index Number is not appropriate in a particular situation.

Valid entries are T or F.

[161] Start Service To Phone Index Value (offset of 0)

See [160].

Valid entries are 0 (zero) through 8191.

[162] Stop Service To Phone Index Value (specify "+" if selecting first service encountered, "-" if last)

See [160].

Valid entries are 0 (zero) through 8191.

[163] Use Old Hub-To-Sub Algorithm

This parameter value should always be F.

[164] Timeout On Intertask Communication (to Newbox or poll tasks)

This parameter defines the maximum time for processing before a response must be returned to the host to prevent the host from timing out.

Valid entries are 20 through 120. The recommended setting is 40.

[165] * OPEN - 1 CHAR *** (***START OF 3.20 VALUES ***)**

This parameter value should always be blank.

[166] * OPEN - BOOLEAN *****

This parameter value should always be F.

[167] Write "System Running/Not Running" To System Console Every "N" Minutes (0 to 1439)

When this parameter is on, the status of the wire link is printed on the system console every N minutes. We recommend using this option, especially if your system is experiencing problems.

The recommended setting is 60.

[168] Initialize Converter If Moved " To" This Converter Status

This parameter controls, when a converter is moved to a particular status, if the wire link does an initialize along with the requested change and initialize command. See [143], Initialize Converter If Moved "From" This Converter Status.

Valid entries are two alphanumeric characters.

[169] Initialize Converter If Account Field Changes

This command performs initialization punches on a converter when the account field is changed.

[170] * OPEN - 4 CHARS *****

This parameter value should always be blank.

[171] * OPEN - BOOLEAN *****

This parameter value should always be F.

[172] Host Sending Command And Initialize Bit In Record Type 260 (add) (bit 10)

This parameter controls whether the wire link processes the initialize bit if sent along with an add command.

Valid entries are:

T = Do command and initialize if sent.

F = Do no processing.

[173] Host Sending Command And Initialize Bit In Record Type 262 (change) (bit 10)

This parameter controls whether the wire link processes the initialize bit if sent along with a change command.

Valid entries are:

T = Do the command and initialize if sent.

F = Do no processing.

[174] Host Sending Telephone Number

This parameter provides a means to ignore data being sent from a host in the telephone number field if it is invalid.

Valid entries are T or F.

[175] Host Sending Purchase Limit

This parameter provides a means to ignore data being sent from a host in the purchase limit field if it is invalid.

Valid entries are T or F.

[176] Host Sending Timeout

This parameter provides a means to ignore data being sent from a host in the timeout field if it is invalid.

Valid entries are T or F.

[177] Host Sending Emergency Alert

This parameter provides a means to ignore data being sent from a host in the emergency alert field if it is invalid.

Valid entries are T or F.

[178] Host Sending Converter Status

This parameter provides a means to ignore data being sent from a host in the converter status field if it is invalid.

Valid entries are T or F.

[179] Host Sending Channel Map

This parameter provides a means to ignore data being sent from a host in the channel map field if it is invalid.

Valid entries are T or F.

[180] Host Sending Amplifier (6 characters)

This parameter provides a means to ignore data being sent from a host in the amplifier field if it is invalid.

Valid entries are T or F.

[181] * OPEN - BOOLEAN *****

This parameter value should always be F.

[182] Host Sending "Convert Command Into An Initialize" In Record Type 170 (bit 7)

This flag controls whether the wire link processes the initialize bit.

Valid entries are:

T = Converts the command into an initialize if sent.

F = The command remains as a change or add.

[183] Host Sending Account Number

This parameter provides a means to ignore data being sent from a host in the account number field if it is invalid.

Valid entries are T or F.

[184] Host Sending Time Zone

This parameter provides a means to ignore data being sent from a host in the time zone field if it is invalid.

Valid entries are T or F.

[185] Host Sending CONVID

This parameter provides a means to ignore data being sent from a host in the converter ID field if it is invalid.

Valid entries are T or F.

[186] * OPEN - BOOLEAN *****

This parameter value should always be F.

[187] * OPEN - BOOLEAN *****

This parameter value should always be F.

[188] Host Sending Frequency Map

This parameter provides a means to ignore data being sent from a host in the frequency map field if it is invalid.

Valid entries are T or F.

[189] Host Sending 12V Aux

This parameter provides a means to ignore data being sent from a host in the 12 auxiliary volt field if it is invalid.

Valid entries are T or F.

[190] * OPEN - BOOLEAN *****

This parameter value should always be F.

[191] Host Sending Output 3 For International Converters

This parameter provides a means to ignore data being sent from a host in the output 3 for international converter field if it is invalid.

Valid entries are T or F.

[192] Host Sending Purchases Allowed

This parameter provides a means to ignore data being sent from a host in the purchases allowed field if it is invalid.

Valid entries are T or F.

[193] International Converters Use Output Channel 3 (ie. 2/3, 3/4)

Typically, a valid output channel for international converters is in the UHF range. A few international sites require channels 2/3 or 3/4. This parameter allows the value sent to be valid for international converters.

Valid entries are T or F.

[194] NEWBOX "update" mode (ie newbox does the db update)

The update mode provides information to NEWBOX so that it punches and updates the subscriber record.

Valid entries are T or F.

[195] NEWBOX "quick" mode (ie no db get)

The quick mode provides complete information to NEWBOX. No subscriber record read is then performed by NEWBOX and information that the wire link supplies gets punched.

Valid entries are T or F.

Parameters [196] to [206] determine which items are to be compared during the refresh mode. Depending on other settings in the wire link configuration file, these differences are printed to the CRT, line printer, and wire link transaction file.

[196] Refresh Mode - Print Differences Not Controlled By [197]...[202]

This parameter controls printing of any other converter information field not defined by parameters [197] through [202].

Valid entries are T or F.

[197] Refresh Mode - Print Differences In Services

See the explanation preceding [196].

Valid entries are T or F.

[198] Refresh Mode - Print Differences In Account Numbers

See the explanation preceding [196].

Valid entries are T or F.

[199] Refresh Mode - Print Differences In Converter Status

See the explanation preceding [196] .

Valid entries are T or F.

[200] Refresh Mode - Print Differences In Phone Index

See the explanation preceding [196] .

Valid entries are T or F.

[201] Refresh Mode - Print Differences In Hub Number

See the explanation preceding [196].

Valid entries are T or F.

[202] Refresh Mode - Print Differences In TCB

See the explanation preceding [196].

Valid entries are T or F.

[203] Refresh Mode - Print Differences In Purchase Limit, Purchases Allowed

See the explanation preceding [196].

Valid entries are T or F.

[204] Refresh Mode - Print Differences In Tuning Type, Output Channel 3, Channel Map

See the explanation preceding [196] .

Valid entries are T or F.

[205] Refresh Mode - Print Differences In Amplifier

See the explanation preceding [196] .

Valid entries are T or F.

[206] Refresh Mode - Print Differences In Connect, Active, Initialized

See the explanation preceding [196].

Valid entries are T or F.

[207] Update With Current Two-Way Values On Add-With-Init

This parameter is not applicable to your ACC-4000 Controller.

[208] Update With Current Two-Way Values On Change-With-Init

This parameter is not applicable to your ACC-4000 Controller.

[209] Send "System Busy" To Host If Backup In Progress (error 111)

During an ACC-4000 Controller backup, the wire links can be stopped via the Business System Gateway screen. If the host sends a transaction during this time, it does not get a response from the wire link. Some hosts abort after a given number of failed transactions. This parameter prevents such aborts.

Valid entries are:

T = The wire link returns Status 111, System Busy - Can't Process Request — Try Again Later to the host.

F = The wire link does not respond to the host during a backup.

[210] During Pay Service Download, Queue PPV Authorization Until PSL Is Finished

During 330 pay service download processing, invalid authorizations can be queued. On completion of PSL processing, the queued entries are retried. Any invalid authorizations that were part of the download are successfully performed.

[211] Close WLPSDL.DAT File "N" Minutes After Last Pay Service Download Command Received (# 330)

This command implements PPV authorization (record type 294) de-queuing during a pay service download (record type 330). The configuration setting lets the wire link coordinate downloads with the host.

Valid entries are:

Negative =	Resumes the PSL task after each 330 command.
0 =	No PSL interaction.
Positive =	Resumes the PSL task after N seconds.

[212] Update With Current Responding Values On Change If Configured To Wait For Punches

This parameter is not applicable to your ACC-4000 Controller.

[213] Print All Error Messages To System Console (excluding 070 errors)

This parameter displays errors occurring on the wire links, except for the "CONVID Not Found" error - 070.

The recommended setting is T.

[214] Print 070 Errors (convid not found) On System Console

This parameter displays "CONVID not found" errors. It should be turned on, except when generating too many errors.

The recommended setting is T.

[215] * OPEN - BOOLEAN *****

This parameter value should always be F.

[216] Start Writing At The Beginning Of The wltrans.dat On Startup (else start where left off)

This option is useful while debugging new host software. It starts logging at line one of the transaction file, providing a means for a quick review of activity since rebooting.

The recommended setting is F.

[217] Send Host Summary Data At EOF in 311 Packet (purchase upload)

At the completion of a 310 upload, the wire link can send an end of file (EOF) packet to the host giving a record count. This parameter enables this feature.

Valid entries are T or F.

[218] Send Host Summary Data At EOF in 321 Packet (pay service upload)

At the completion of a 320 upload, the wire link can send an end of file (EOF) packet to the host giving a record count. This parameter enables this feature.

Valid entries are T or F.

[219] Return 396 Status/Error To Host For All Poll Errors During 284 Data Collection

Use this parameter in conjunction with logging option 14, parameter [049].

Valid entries are:

T = PPV authorizations get written to the purchase data collection file and available for the host 310 command, Upload To Host.

F = Action is not allowed.

[220] *** OPEN - 6 CHARS ***

This parameter value should always be blank.

[221] *** OPEN - 6 CHARS ***

This parameter value should always be blank.

[222] Clear Events If Moved "From" This Converter Status

An initialization gets performed on downloadable converters moved from this converter status.

See [223].

[223] Clear Events If Moved "To" This Converter Status

An initialization gets performed on downloadable converters moved to this converter status.

See [223].

[224] * OPEN - 2 CHARS *****

This parameter value should always be blank.

[225] * OPEN - 2 CHARS *****

This parameter value should always be blank.

[226] Sync Packet Size Error Processing (0= normal, 1= >6, 2= >8 log to system console)

This parameter generates an error 144 on the system console if the sync packet from the host has a problem with size. The sync packet size error format is SNNNNN.

Valid entries are:

0 = Normal, does not check the sync packet size.

1 = Prints the error when it is over six characters, the normal size.

2 = Prints the error when it is over eight characters.

[227] Processing For Serial No. Already Assigned (0= err/prt, 1= err/ret/prt, 2= ret/prt, 3= ret)

The 260 Command, when adding a Converter ID having a duplicate Serial Number, generates an error 055, Serial Number Already Assigned.

Valid entries are:

0 = Prints the error on the system console, returns error 055 to the host, and does not return the Converter ID of the record that has that Serial Number.

1 = Prints the error on the system console; returns error 055 to the host, and returns the Converter ID with that Serial Number.

2 = Prints the error on the system console, returns the Converter ID with that Serial Number, and does not return an error to the host.

3 = Does not print the error on the system console, returns the Converter ID with that Serial Number, and does not return an error to the host.

The recommended setting is 2.

[228] Processing For No CONVID Number (all 0's /1's) Sent By Billing System (0= normal, 1= ret err, 2= ret convid)

The host typically sends the Converter ID, except for adds of downloadable converters. If on Converter ID gets sent, special handling can detect it.

Valid entries are:

0 = OK, except when required.

1 = A 119 error is displayed, and a 76 error is displayed and returned to the host.

2 = Logs errors and returns the Converter ID that should have been sent for this account.

[229] Item Checking For Record Type 330 (0= err/prt, 1=prt, 2= ignore, 3= debug file/ignore)

During 330 command, Pay Service Download activity, the item number is part of the data records and should ascend sequentially. The wire link can perform a check to assure this.

Valid entries are:

0 (zero) = Returns and displays error.

1 = Displays the error.

2 = Ignores item error checking.

3 = Writes all 330 records to the wlpsdlxx.dat file.

[230] "Write PPV Purchases To File" (logging option) (0= not allowed,1= upgrade,2= downgrade, 3= both)

When writing purchases to the Purchase file, the host may want to receive notification of canceled purchases. This parameter enables the feature and its options.

Valid entries are:

0 (zero) = Does not write PPV authorizations to the Purchase file.

1 = Writes authorizations (upgrades).

2 = Writes authorizations and cancellations (downgrades).

[231] Set Retry = T On Two-way Initialization Error (error 58)

This command sets the retry bit in the record type 1 response packets for two-way converter operations.

See [232].

[232] Set Retry = T On Two-way Non-responding Error (error 72)

This command sets the retry bit in the response packets for two-way converter operations.

[233] PPV Module Installed

This flag is used in conjunction with logging option 12, parameter [047] for deploying the external PPV module.

Valid entries are:

T = Allows use of the PPV module. The entry should always be T for software generated after 1988.

F = The default value prevents accidental use of the PPV Module by the logging screen.

[234] Changes To Refresh Options Allowed ([025],[026])

This parameter allows changes to the refresh logging options.

[235] Changes to Display Misc (non-critical) Errors Allowed ([045])

This parameter allows changes to the miscellaneous error logging options.

[236] Changes To Update "Purchases" File With PPV Transactions Allowed ([049])

This parameter allows changes to the Purchase file with PPV transactions.

[237] Return Purchase Operation In 311 Packet (returns blank/1/2, see write-up)

During purchases upload [310], the response can indicate the type of purchase as an upgrade or downgrade. On enabling this feature, an upgrade is loaded with an ASCII 1 and a downgrade is loaded with an ASCII 2. A blank value disables this parameter.

[238] Set Account Number To Blanks When Blanks Sent From Host

This command sets an account number to blanks on receiving blanks for that account number from the host. Otherwise all blanks are interpreted as the default ($).

[239] Set Amplifier To Blanks When Blanks Sent From Host

This command sets the amplifier value to blanks on receiving blanks for that amplifier from the host. Otherwise all blanks are interpreted as the default ($).

[240] Set Converter Status To Blanks When Blanks Sent From Host

This command sets a converter status to blanks on receiving blanks for that converter status from the host. Otherwise all blanks are interpreted as the default ($).

Use parameters [241] through [249] to add or change converters on the controller that are types not supported by your host. This need can arise on adding new Converter Types to the controller. For instance, you may want to add Converter Types 30-32, but your host only supports Converter Types through 20. Assume that your site does not have Converter Types 15-17. With this option, you can turn type 15 into type 30, 16 into 31, and 17 into 32. You could set parameter [241] to 30, [242] to 15, and [243] to 17. You can control three groups of converters this way.

[241] Change Converter Type Group 1 - To Converter Type

See explanation above.

[242] Change Converter Type Group 1 - From Converter Type Start

See explanation above.

[243] Change Converter Type Group 1 - From Converter Type Stop

See explanation above.

[244] Change Converter Type Group 2 - To Converter Type

See explanation above.

[245] Change Converter Type Group 2 - From Converter Type Start

See the explanation above.

[246] Change Converter Type Group 2 - From Converter Type Stop

See the explanation above.

[247] Change Converter Type Group 3 - To Converter Type

See the explanation above.

[248] Change Converter Type Group 3 - From Converter Type Start

See the explanation above.

[249] Change Converter Type Group 3 - From Converter Type Stop

See the explanation above.

[250] Host Sending Record Type 500 (0= normal, 1= accept/no check, 2= reject)

The 500 command is the sign on command used on the AI-0, another General Instrument controller. This parameter allows the ACC-4000 Controller to process commands sent by hosts supporting only the AI-0 Controller.

The recommended setting is 0 (zero).

[251] Pay Services Validation During PPV and External Module (0= normal, 1= enabled)

When using the external PPV module, this parameter can detect pay service errors sent with 294 PPV commands.

Valid entries are:

0 (zero) = No checking.

1 = Pay service checking.

The recommended setting is 0 (zero).

[252] Processing For 096 Error (service already selected) During PPV (0=ignore, 1=ret/prt/err, 2=ret/prt, 3=ret)

This parameter controls options with pay service validation during 294 PPV command processing.

Valid entries are:

0 (zero) = Ignores 96 errors.

1 = Returns the error, and displays it on the console.

2 = Not implemented.

3 = Not implemented.

The recommended setting is 2.

[253] Maximum Block Size For I/O Output

This parameter is not applicable to your ACC-4000 Controller.

[254] Update TCB Values With Billing System Data Regardless Of Converter Type

This parameter can be required if the host has the wrong Converter Type defined on their side. This command updates the TCB values with host data, regardless of the Converter Type.

The recommended setting is F.

[255] Valid DCR Service Numbers Start (if dcr only accept these services)

This parameter indicates the start of the valid digital cable radio (DCR) hardware address range. On receiving numbers out of the valid range, the system rejects them.

[256] Valid DCR Service Numbers Stop (if dcr only accept these services)

This parameter indicates the end of the valid DCR hardware address range. On receiving numbers out of the valid DCR Service Number range, the system rejects them.

See [255].

[257] Services To Frequency Map Defined On Controller (0= disabled) (add absolute value to offset of 0)

This parameter establishes that services to frequency map are defined on your controller.

[258] Start Services To Frequency Map (offset of 0)

This parameter starts services to frequency map.

[259] Stop Services To Frequency Map (specify "+" value if selecting 1st service encountered, "-" if last)

This parameter stops services to frequency map.

[260] 1st Valid Start Converter ID For This Wire Link

You can limit the Converter ID range that the host accesses within the wire link (for hotel systems, as an example). On receiving Converter IDs out of this range, the system rejects them. Access by Serial Number is allowed. Therefore on assigning Converter IDs via the add command (# 262), enforce partition assignments and the hub-to-sub.

[261] 1st Valid Stop Converter ID For This Wire Link

See [260].

[262] 2nd Valid Start Converter ID For This Wire Link

See [260].

[263] 2nd Valid Stop Converter ID For This Wire Link

See [260].

[264] Initialize Converter If Change In Active Value (1= any change, 2= N to Y, 3= Y to N)

This parameter controls initialization punches if there are active field changes during the change command.

[265] Minutes Between Storing Statistical Counters (0-60)

The system can store statistics in a non-volatile data record so that if the controller is rebooted, statistics for the day are not lost.

A parameter value of 0 (zero) turns off this feature. A parameter value greater than 0 (zero) is the interval, in minutes, between storing the statistical counters.

[266] Minutes Between Logging 111 Errors (0-60)

The 111 error logging can be suppressed for the time interval that you specify in parameter [266]. Previously hosts were immediately retrying after the 111 error was returned, thus generating many pages of error listings. You can reduce the logging to every N minutes.

Valid entries are 0 (zero) through 60. A value of 0 (zero) specifies no suppression.

[267] * OPEN - INTEGER *****

This parameter value should always be 0 (zero).

[268] * OPEN - INTEGER *****

This parameter value should always be 0 (zero).

[269] * OPEN - INTEGER *****

This parameter value should always be 0 (zero).

[270] Disable I/O When Wire Link Is "Not Running"

This parameter does not apply to your ACC-4000 Controller.

[271] Use Alternate Protocol Field For Frequency Map (output channel map/frequency map)

This parameter offers an alternate protocol field. When enabled, the system supports a full integer field for the frequency map subscriber field. The frequency map field is a composite output channel and frequency map subscriber field that takes the sum of 100 times the output channel map plus the frequency map value.

[272] * OPEN - BOOLEAN *****

This parameter value should always be F.

[273] * OPEN - 1 CHARS *****

This parameter value should always be blank.

[274] * OPEN - 1 CHARS *****

This parameter value should always be blank.

[275] * OPEN - 2 CHARS *****

This parameter value should always be blank.

[276] * OPEN - 2 CHARS *****

This parameter value should always be blank.

[277] * OPEN - 2 CHARS *****

This parameter value should always be blank.

[278] * OPEN - 2 CHARS *****

This parameter value should always be blank.

[279] * OPEN - 6 CHARS *****

This parameter value should always be blank.

[280] * OPEN - 6 CHARS *****

This parameter value should always be blank.

[281] * OPEN - 6 CHARS *****

This parameter value should always be blank.

[282] ***OPEN - 6 CHARS ***

This parameter value should always be blank.

[283] 1st Return Error Code From Start

Configuration parameters [283] through [287] enable error filtering. When an error lies within one of two possible ranges that you configured, the To value overrides the error returned to the host. The value is overridden after display processing, so the message might be "072 Converter not responding on the Wire Link Monitor," but a 58 is returned in the error code sent to the host. Therefore you should cross check the 351 message on the console display.

[284] 1st Return Error Code From Stop

See [283].

[285] 1st Return Error Code To

See [283].

[286] 2nd Return Error Code From Start

See [283].

[287] 2nd Return Error Code From Stop

See [283].

[288] 2nd Return Error Code To

See [283].

[289] *** OPEN - Boolean ***

This parameter value should always be F.

[290] PPV Event (294) To Channel Map Defined On Controller (0-disabled)

This parameter implements PPV event to channel map features. On using the first three parameters, the result is the same as using the services to channel map feature. When you use them as cyclical, option [293], the maps are computed using parameter [294] that defines the wrap-around point. When you use parameter [295], add to increment, the maps are computed using parameters [296] and [297], keeping the maps from incrementing multiple times.

[291] Start Event (294) To Channel Map Value (offset 0)

See [290].

[292] Stop Event (294) To Channel Map Value

See [290].

[293] Use "Cyclical" To Channel Map (eg. if 3 then 1001 is 10, 1002 is 11, 1003 is 12, 1004 is 10)

See [290].

[294] "Cyclical" Value

See [290].

[295] Use "Add To" Existing Channel Map

See [290].

[296] "Add To" Start Valid Target Channel Map Range

See [290].

[297] "Add To" Stop Valid Target Channel Map Range

See [290].

[298] * OPEN - 1 CHAR *** (******************* START OF 5.11R4 VALUES *******************)**

This parameter value should always be blank.

Parameters [299] through [360] are not yet implemented.

[299] Hub To Frequency Map Defined On Controller (0= disabled) (add absolute value to offset of 0)

This parameter is not yet implemented.

[300] Start Hub To Frequency Map (offset of 0)

This parameter is not yet implemented.

[301] Stop Hub To Frequency Map

This parameter is not yet implemented.

[302] Hub To Channel Map Defined On Controller (0= disabled) (add absolute value to offset of 0)

This parameter is not yet implemented.

[303] Start Hub To Channel Map (offset of 0)

This parameter is not yet implemented.

[304] Stop Hub To Channel Map

This parameter is not yet implemented.

[305] Do (limited) Edit Checking Of Pay Service Downloads (0= normal, 1= err/ret/prt, 2= ret/prt)

This parameter is not yet implemented.

[306] Always Make Phone Index Equal (0-99) (# means ignore option)

This parameter is not yet implemented.

[307] Always Make Hub Number Equal (1-99)

This parameter is not yet implemented.

[308] * OPEN - INTEGER *****

This parameter value should always be 0 (zero).

[309] * OPEN - INTEGER *****

This parameter value should always be 0 (zero).

[310] Always Make Group Number Equal (0-191)

This parameter is not yet implemented.

[311] Always Make Sub Group 1 Equal (0-191)

This parameter is not yet implemented.

[312] Always Make Sub Group 2 Equal (0-191)

This parameter is not yet implemented.

[313] Always Make Sub Group 3 Equal (0-191)

This parameter is not yet implemented.

[314] Always Make Account Number Equal (not implemented)

This parameter is not yet implemented.

[315] Always Make Telephone Number Equal (not implemented)

This parameter is not yet implemented.

[316] Always Make Active Equal (Y, N)

This parameter is not yet implemented.

[317] Always Make Purchases Allowed Equal (Y, N)

This parameter is not yet implemented.

[318] Always Make Remove Equal (Y, N)

This parameter is not yet implemented.

[319] Always Make PC Locked Equal (Y, N)

This parameter is not yet implemented.

[320] Always Make PC Morality Equal (Y, N)

This parameter is not yet implemented.

[321] Always Make Volume Control Equal (Y, N)

This parameter is not yet implemented.

[322] Always Make TCP Equal (Y, N)

This parameter is not yet implemented.

[323] Always Make Favorite Channel Equal (Y, N)

This parameter is not yet implemented.

[324] Always Make Autotest Equal (not used)

This parameter is not yet implemented.

[325] Always Make Purchase Limit Equal (0-16 for types 4, 6, 8, 11, 13 and 14; 0-63 for greater types)

This parameter is not yet implemented.

[326] Always Make Timeout Equal (2-384 in increments of 2)

This parameter is not yet implemented.

[327] Always Make Emergency Alert Equal (16 bit binary, low order 7 bits used)

This parameter is not yet implemented.

[328] Always Make Tuning Type Equal (H, I, S)

This parameter is not yet implemented.

[329] Always Make Time Zone Equal (0-3)

This parameter is not yet implemented.

[330] Always Make Converter Status Equal (2 characters)

This parameter is not yet implemented.

[331] Always Make Channel Map Equal (1-99)

This parameter is not yet implemented.

[332] Always Make Output Channel 3 Equal (Y, N, 14-99 for international converters)

This parameter is not yet implemented.

[333] Always Make Frequency Map Equal (1-99)

This parameter is not yet implemented.

[334] Always Make Output Frequency Map Equal (1-99)

This parameter is not yet implemented.

[335] Always Make Input Frequency Map Equal (1-99)

This parameter is not yet implemented.

[336] Always Make 12V Aux Equal (1= off, 2= controller by a/b switch, 3= on)

This parameter is not yet implemented.

[337] Always Make Amplifier Equal (6 characters)

This parameter is not yet implemented.

[338] Host Sending Group Number 1

This parameter is not yet implemented.

[339] Host Sending Sub Group 1

This parameter is not yet implemented.

[340] Host Sending Sub Group 2

This parameter is not yet implemented.

[341] Host Sending Sub Group 3

This parameter is not yet implemented.

[342] Host Sending Active

This parameter is not yet implemented.

[343] Host Sending Remote

This parameter is not yet implemented.

[344] Host Sending PC Locked

This parameter is not yet implemented.

[345] Host Sending PC Morality

This parameter is not yet implemented.

[346] Host Sending Volume Control

This parameter is not yet implemented.

[347] Host Sending TCP (time control programming)

This parameter is not yet implemented.

[348] Host Sending Favorite Channel

This parameter is not yet implemented.

[349] Host Sending Autotest

This parameter is not yet implemented.

[350] Host Sending Output Frequency Map

This parameter is not yet implemented.

[351] Host Sending Input Frequency Map

This parameter is not yet implemented.

[352] Host Sending Near Video On Demand (NVOD)

This parameter is not yet implemented.

[353] Host Sending Electronic Program Guide (EPG)

This parameter is not yet implemented.

[354] Host Sending Group

This parameter is not yet implemented.

[355] Host Sending Subgroup 1

This parameter is not yet implemented.

[356] Host Sending Subgroup 2

This parameter is not yet implemented.

[357] Host Sending Subgroup 3

This parameter is not yet implemented.

[358] Purchase Limit Processing (0= normal, 1= purchasability only, 2= both)

This parameter is not yet implemented.

[359] Purchasability Processing (0= normal, 1= purchasability only, 2= both)

This parameter is not yet implemented.

[360] Purchasability Processing Purchase Limit Value (0= default)

This parameter is not yet implemented.

8 • Pay Service Loader Configuration File

Introduction

The Pay Service Loader (PSL) configuration file provides the necessary parameters for performing automatic PSL operations, including:

- A list of pay service providers
- A range of service codes used to control a channel
- The channel number
- Defining how far ahead events can be loaded
- Defining how long events can remain in the system before being deleted

These and other parameters are set up for each pay service provider.

The most common reasons for modifying this file are:

- Adding new pay service providers
- Using a PSL operation for the first time
- Changing the range of available Service Codes

Printing PSL Configuration File

Use the Output Disk Files utility to obtain a listing of your PSL configuration file. The utility lets you direct output to the screen or printer. For more information on this utility, see *Volume II, Chapter 9, Data Files.*

The directory is /usr/acc4000/data and the filename is pslconfig.dat. Remember that UNIX is case-sensitive and that you must enter the directory and filename in lower case letters.

Sample PSL Configuration File

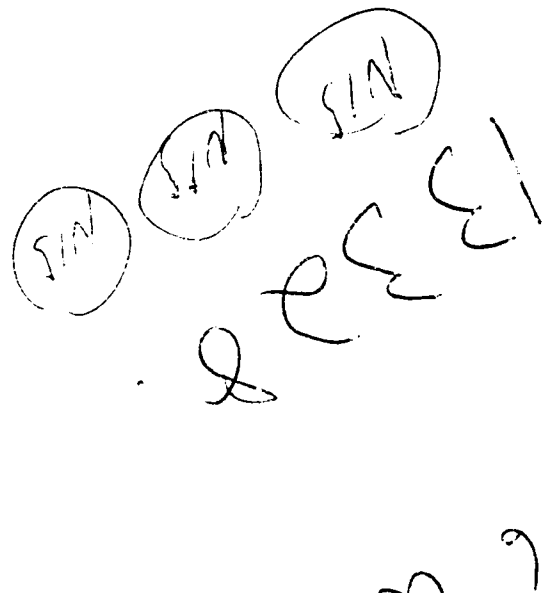
Due to space restrictions, the following sample PSL configuration file may have some lines that wrap around to a second line. Your actual configuration file lines do not wrap around in this manner. When looking at the actual file, note too that the line numbers are always represented in square brackets [ ].

Default Value	Line Number	Explanation
5	[1]	PSL split function wake-up timer (minutes)
4	[2]	Number of days to hold expired services
7	[3]	Number of days ahead to pre-load services
50	[4]	Number of free lines to leave in Pay Service file
0	[5]	Database access delay

Default Value	Line Number	Explanation
F	[6]	All Must Pass-T means rollback adds after errors
F	[7]	Kill expired events on any ACC-4000 channel
F	[8]	Real-time add hits immed. if downloaded current events
F	[9]	Accept delete requests in downloaded data file (date=0)
T	[10]	Log Deleted Entries
T	[11]	Log Added Entries
4	[12]	Number of allowable days between time-based deletes
W	[13]	(W)eekly (next 7 lines) or (M)onthly (next 31) schedule
04:00	[D-1]	time of delete / add on day 1 of month (or Monday)
04:00	[D-2]	time of delete / add on day 2 of month (or Tuesday)
04:00	[D-3]	time of delete / add on day 3 of month (or Wednesday)
04:00	[D-4]	time of delete / add on day 4 of month (or Thursday)
04:00	[D-5]	time of delete / add on day 5 of month (or Friday)
04:00	[D-6]	time of delete / add on day 6 of month (or Saturday)
04:00	[D-7]	time of delete / add on day 7 of month (or Sunday)
NONE	[D-8]	time of delete / add on day 8 of month
NONE	[D-9]	time of delete / add on day 9 of month
NONE	[D-10]	time of delete / add on day 10 of month
NONE	[D-11]	time of delete / add on day 11 of month
NONE	[D-12]	time of delete / add on day 12 of month
NONE	[D-13]	time of delete / add on day 13 of month
NONE	[D-14]	time of delete / add on day 14 of month
NONE	[D-15]	time of delete / add on day 15 of month
NONE	[D-16]	time of delete / add on day 16 of month
NONE	[D-17]	time of delete / add on day 17 of month
NONE	[D-18]	time of delete / add on day 18 of month
NONE	[D-19]	time of delete / add on day 19 of month
NONE	[D-20]	time of delete / add on day 20 of month
NONE	[D-21]	time of delete / add on day 21 of month
NONE	[D-22]	time of delete / add on day 22 of month
NONE	[D-23]	time of delete / add on day 23 of month
NONE	[D-24]	time of delete / add on day 24 of month

Default Value	Line Number	Explanation
NONE	[D-25]	time of delete / add on day 25 of month
NONE	[D-26]	time of delete / add on day 26 of month
NONE	[D-27]	time of delete / add on day 27 of month
NONE	[D-28]	time of delete / add on day 28 of month
NONE	[D-29]	time of delete / add on day 29 of month
NONE	[D-30]	time of delete / add on day 30 of month
NONE	[D-31]	time of delete / add on day 31 of month
5	[T-1]	Number of hours to back up event time to get list start
1	[T-2]	Number of hours to pad for possible event overtime
00:15	[L-1]	Map load time
08:15	[L-2]	Map load time
16:15	[L-3]	Map load time
NONE	[L-4]	Map load time
NONE	[L-5]	Map load time
NONE	[L-6]	Map load time
NONE	[L-7]	Map load time
NONE	[L-8]	Map load time
NONE	[L-9]	Map load time
NONE	[L-10]	Map load time
NONE	[L-11]	Map load time
NONE	[L-12]	Map load time
3	[CHAN]	# of channels. 0=no adds or channel specific deletes
CVS	[CVS-1]	Pay Service provider name
A21	[CVS-2]	Pay Service channel specification
T	[CVS-3]	Auto load capability for this channel
T	[CVS-4]	Auto delete
T	[CVS-5]	Pay Service list time generation
0	[CVS-6]	Channel schedule back off time (minutes)
F	[CVS-7]	Local Service Numbers Defined
1000	[CVS-8]	Starting Service Number
8191	[CVS-9]	Ending Service Number
T	[CVS-10]	Local Service Codes Defined
197	[CVS-11]	Starting Service Code
208	[CVS-12]	Ending Service Code

Default Value	Line Number	Explanation
193	[CVS-13]	Secondary Starting Service Code
208	[CVS-14]	Secondary Ending Service Code
T	[CVS-15]	Local DSE Scheduling
:07	[CVS-16]	Channel Preview Time :MM
00:35	[CVS-17]	Purchase Time HH:MM
3	[CVS-18]	Event Scramble Mode [0-9]
A22	[A22-1]	Pay Service provider name
A22	[A22-2]	Pay service channel specification (A22=40)
T	[A22-3]	Auto load capability for this channel
T	[A22-4]	Auto delete
T	[A22-5]	Pay service list time generation
0	[A22-6]	Channel schedule back off time (minutes)
F	[A22-7]	Local Service Numbers Defined
3000	[A22-8]	Starting Service Number
4999	[A22-9]	Ending Service Number
T	[A22-10]	Local Service Codes Defined
213	[A22-11]	Starting Service Code
224	[A22-12]	Ending Service Code
209	[A22-13]	Secondary Starting Service Code
224	[A22-14]	Secondary Ending Service Code
T	[A22-15]	Local DSE Scheduling
:07	[A22-16]	Channel Preview Time :MM
00:35	[A22-17]	Purchase Time HH:MM
3	[A22-18]	Event Scramble Mode [0-9]
A23	[A23-1]	Pay Service provider name
A23	[A23-2]	Pay Service channel specification
T	[A23-3]	Auto load capability for this channel
T	[A23-4]	Auto delete
T	[A23-5]	Pay Service list time generation
0	[A23-6]	Channel schedule back off time (minutes)
F	[A23-7]	Local Service Numbers Defined
1000	[A23-8]	Starting Service Number
8191	[A23-9]	Ending Service Number
T	[A23-10]	Local Service Codes Defined



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. the PSL configuration

Explanation of Individual Lines

ner

:n, in minutes, PSL
ule input file (inputn.psl)

[2] Number Of Days To Hold Expired Services

This value, in conjunction with line three, controls the date window used by PSL in determining what services to delete and add. Any current service on a PSL-controlled channel that exceeds this value gets deleted during the PSL delete-old/add-new operations.

Valid entries are 1 through 31.

[3] Number Of Days Ahead To Pre-Load Services

This value controls the add phase of PSL. Service additions stop during the add phase on encountering a service that does not become active for more than the number of days that you specify here.

Valid entries are 1 through 40.

[4] Number Of Free Lines To Leave In Pay Service File

This parameter assures that PSL leaves this many lines of the pay service common unused. This leaves spaces for you to do packaging or to add special events via the screens.

Valid entries are 1 through 100. The recommended value is 50.

[5] Database Access Delay

This value controls the delay period for each database access. It is expressed in number of tics (1/100 of a second).

Valid entries are 0 (zero) through 100.

[6] All Must Pass

PSL can back out additions made if it detects an error. When this parameter is true, back-outs are performed.

Valid entries are T or F.

[7] Kill Expired Events On Any ACC-4000 Channel

When set to true, this parameter instructs PSL to do deletes on any channel in the pay service file using the value defined in the pslconfig.dat file for the Number Of Days To Hold Expired Services. When set to false, PSL does not delete old events unless this is specified in the channel specific section of PSL configuration file, parameters [XXX-1] through [XXX-18].

Valid entries are T or F.

[8] Real-Time Add Hits Immediately If Downloaded Current Events

Normally, an input file is not added immediately to the pay services common; it only gets sorted, ensuring that there is no overlap with existing events. However, if this value is true, a downloaded file gets added to pay services common right away instead of the next morning. This add process slows your system down for approximately five minutes.

Valid entries are T or F.

[9] Accept Delete Requests In Downloaded Data File

When schedules are downloaded from a billing system via the wire link, PSL can let the billing system request deletion of specific events. Since this can cause performance degradation on your controller, this parameter can instruct PSL to ignore such requests from the billing system.

Valid entries are T or F. The recommended value is F.

[10] Log Deleted Entries

When set to true, this parameter instructs PSL to log deleted Service Numbers to the console, PSL daily log file, (pslddd.log), and logger file during its processing.

Valid entries are T or F.

[11] Log Added Entries

When set to true, this parameter instructs PSL to log added Service Numbers to the console, the logger file, and the PSL daily log file (pslddd.log, where ddd represents the first three letters of the day of the week).

Valid entries are T or F.

[12] Number Of Allowable Days Between Time-Based Deletes

Since PSL depends on the system date for performing delete old and add new operations, it is important that the system date is correct. For this reason, PSL remembers the date of its last delete or add operation, and determines if the current date differs from the last delete date by more than this parameter. If it does, PSL assumes that the system date is incorrect, an error message is logged, and the delete operation is not attempted.

Valid entries are 1 to 31. The default value is 4.

[13] Weekly Or Monthly Schedule

This parameter controls the way that PSL views parameters [D-1 through D-31]. When set to M for a monthly schedule, each of the following time values is associated with its given day of the month. When set to W for a weekly schedule, the first seven time values are associated with each day of the week, starting with Monday.

Valid entries are M or W.

[D-1..31] Time Of Delete/Add

Each of these values expresses for their associated day, the time of day that the delete or add function is to occur. A value of NONE indicates that no operation occurs on that day. This method allows PSL to schedule the operation for any time of any day during the week or month. Select times when the system is not busy with backups, data collections, or other heavy activity.

Valid entries are 00:00 through 23:59, or NONE.

[T-1] Number Of Hours To Back Up Event Time To Get List Start

PSL can calculate authorization list times for events from their actual start times. This parameter specifies the minimum number of hours that the calculation must back off of the actual start time before attempting to resolve to one of the map load times below. This back off time allows the authorization lists time to hit each converter in the system before each event begins.

Valid entries are 1 through 8.

[T-2] Number Of Hours To Pad For Possible Event Overtime

This parameter specifies the minimum number of hours the list time must have added to its end time before attempting to resolve to one of the map load times below. This parameter assures that sporting events running into overtime do not lose their authorizations prematurely.

Valid entries are 1 or 2.

[L-1..12] Map Load Time

The authorization list time calculation uses these twelve time values to construct times of the day when groups of events become active and expire. A value of NONE indicates that the time slot is not used.

Valid entries are 00:00 through 23:59, or NONE.

[CHAN] Number Of Channels

This parameter defines the number of pay service channels managed by PSL. It also indicates to PSL how many channel configuration sections of the file to read. A value of 0 (zero) means that PSL does not do any adds or channel specific deletes.

Valid entries are 0 (zero) through 30.

The following 18 parameters repeat for each channel managed by PSL:

[XXX-1] Pay Service Provider Name

This parameter in conjunction with the next allow PSL to match the pay service provider name, such as CVS, in the raw input record to an actual DS/E channel number. The label [XXX-1..18] would in this case read [CVS-1..18].

Valid entries must match the three characters in the input file. Blanks are not valid characters. For example, CVS, REQ, A21, 022.

[XXX-2] Pay Service Channel Specification

This parameter defines the actual DS/E channel number associated with the pay service, A40 for example. This channel specification must be resident in the controller's DS/E file.

Valid entries are A02 through A99 and B02 through B99.

[XXX-3] Auto Load Capability For This Channel

This parameter controls whether PSL performs the automatic loading operation for this channel at its daily wake-up time. It is possible for you to configure PSL to perform deletions but not additions.

Valid entries are T or F.

[XXX-4] Auto Delete

This parameter controls whether PSL performs the automatic delete operation for this channel at its daily wake-up time. It is possible for you to configure PSL to perform additions but not deletions.

Valid entries are T or F.

[XXX-5] Pay Service List Time Generation

This parameter controls whether PSL performs the calculation to determine authorization list times for event viewing times. When this flag is true, PSL calculates pay service times itself. When this flag is false, PSL uses the pay service times in the input file.

Valid entries are T or F. The recommended value is T.

[XXX-6] Channel Schedule Back-Off Time (Minutes)

The controller activates the Service Code on the scrambler this number of minutes before or after the channel schedule time. Below are two examples; the first shows what happens when the value of this parameter is a positive number, and the second shows the results when the value is negative.

For example, if you have a 10:00 a.m. movie that lasts for 90 minutes, a back-off time of 5 minutes causes the scrambler to start using this event's Service Code at 09:55. Also, the duration is adjusted to 95 minutes so that the movie still ends at 11:30. The benefit to you is that Impulse converters can purchase the event starting at 09:55. The drawback is that the interstitial period, which is often used for movie previews, gets scrambled at 09:55.

On the other hand, a negative back-off time, such as -3 minutes, changes the start time to 10:03 and the duration to 87 minutes. Thus the scrambler uses its default (interstitial) Service Code for those 3 minutes. As long as that default mode is clear, all converters get a 3-minute preview of the movie. The drawback is that Impulse converters cannot purchase the event until 10:03.

[XXX-7] Local Service Numbers Defined

This parameter indicates whether to generate Service Numbers, or to take them directly from the input file record. This value is normally false, since the billing system and the controller must be in total agreement about the mapping of Service Numbers to events.

Valid entries are T or F. The recommended value is F.

[XXX-8] Starting Service Number

This parameter defines the lower limit of the range of valid Service Numbers for this channel.

Valid entries are 1 through 8191.

[XXX-9] Ending Service Number

This parameter defines the upper limit of the range of valid Service Numbers for this channel.

Valid entries are 1 through 8191.

[XXX-10] Local Service Codes Defined

This parameter indicates whether to generate Service Codes, or to take them directly from the input file record. Normally, this value is set to true, as the controller is the ultimate authority of the Service Codes used for each event.

Valid entries are T or F.

[XXX-11] Starting Service Code

This parameter defines the lower limit of the range of valid Service Codes for this channel.

Valid entries are 002 through 255.

[XXX-12] Ending Service Code

This parameter defines the upper limit of the range of valid Service Codes for this channel.

Valid entries are 002 through 255.

[XXX-13] Secondary Starting Service Code

This parameter defines the lower limit of the range of valid secondary Service Codes for this channel. This range of Service Codes gets used on detecting a channel schedule overlap on the primary Service Codes.

Valid entries are 002 through 255.

[XXX-14] Secondary Ending Service Code

This parameter defines the upper limit of the range of valid secondary Service Codes for this channel. This range of Service Codes gets used on detecting a channel schedule overlap on the primary Service Codes.

Valid entries are 002 through 255.

[XXX-15] Local DS/E Scheduling

When this parameter is true, the following two parameters are unconditionally set in the channel schedule record regardless of the contents of the downloaded file. Otherwise, the channel schedule record is set in accordance with the downloaded file.

Valid entries are T or F.

[XXX-16] Channel Preview Time

This parameter is the time in minutes, after the service starts, that the scrambler transmits unscrambled video on the channel. It allows IPPV subscribers to preview the service.

Valid entries are 00 (zero) through 59.

[XXX-17] Purchase Time

This parameter is the time in hours and minutes, that the service is purchasable.

Valid entries are 00:00 through 23:59.

[XXX-18] Event Scramble Mode

This parameter specifies the scramble mode used during the event. For example, scramble mode 3 means 6 dB sync suppression.

An entry of 0 (zero) defaults to the scramble mode in the DS/E record. Therefore, only use 0 (zero) when your default scramble mode is not clear or standby.

Valid entries are 0 (zero) through 9.

9 • FONE System Configuration File

Purpose

This file contains all the parameters relevant to STARFONE operations including:

- Phone number for the receiving end of data line
- Number of modems
- Time for background data collection

The most common reasons for modifying this file are:

- Changing the phone number on the receiving end of the data line
- Adding additional phone lines to the return data line
- Changing the number of modems

Printing the FONE Configuration File

The Output Disk Files utility is used to obtain a listing of the ACC-4000 FONE configuration file. This utility lets you direct the output to the screen or printer. Please see *Volumes II, Chapter 9, Data Files* for a description of how to perform this procedure.

The FONE configuration file directory is /user/acc4000/data and the filename is fonconfig.dat. Remember that UNIX is case-sensitive and that you must enter the directory and filename in lower case letters.

Sample FONE Configuration File by Line Number

Due to space restrictions, the following sample FONE configuration file has some lines that wrap around to a second line. Your actual configuration file does not wrap around in this manner. When looking at the actual file, note too that the line numbers are always represented in square brackets [ ].

Default Value	Line Number	Explanation
V06.20	[001]	IPPV software version. Site upgrade date: 13-Jul-94
18	[002]	time connect - time (secs) that converter will wait for system to communicate with it (downloaded)
T	[003]	line request - flag indicates whether the line request detection feature is activated (downloaded)
T	[004]	summary debug - controls whether summary table &, purch stats for group operation are logged
F	[005]	dial activity debug - controls whether telephone activity is logged for dial commands
F	[006]	responding activity debug - controls whether telephone activity is logged for responding messages
300	[007]	baud - baud rate for the telephone modems
10	[008]	log # purch - log purchase update progress every (log # purch) purchase processed - (0 = no purchase logging)
25	[009]	after carrier delay - time (1/60 sec) that system will wait after detecting carrier on line before communicating
1	[010]	modems - number of modems ports (CCT tasks) on the system (max = 16)
0	[011]	number of telephone numbers - number of telephone numbers assigned to converters (max = 10)
_____	[012]	1st telephone number - use fone index of 1 (in converter's record) to assign converter this phone #
_____	[013]	2nd telephone number - use fone index of 2 (in converter's record) to assign converter this phone #
_____	[014]	3rd telephone number - use fone index of 3 (in converter's record) to assign converter this phone #
_____	[015]	4th telephone number - use fone index of 4 (in converter's record) to assign converter this phone #
_____	[016]	5th telephone number - use fone index of 5 (in converter's record) to assign converter this phone #
_____	[017]	6th telephone number - use fone index of 6 (in converter's record) to assign converter this phone #

Default Value	Line Number	Explanation
_____	[018]	7th telephone number - use fone index of 7 (in converter's record) to assign converter this phone #
_____	[019]	8th telephone number - use fone index of 8 (in converter's record) to assign converter this phone #
_____	[020]	9th telephone number - use fone index of 9 (in converter's record) to assign converter this phone #
_____	[021]	10th telephone number - use fone index of 10 (in converter's record) to assign converter this phone #
60	[022]	diag timeout - time (secs) used to timeout a single diagnostics operation
0	[023]	CCT task retries - num of retries during phone communication by CCT tasks
14	[024]	CCT task two-way timeout period
40	[025]	initial interleave wait for all operations in seconds
10	[026]	minimum interleave wait for all operations in seconds
300	[027]	maximum interleave wait for all operations in seconds
1	[028]	initial subgroup size for data collection per modem
1	[029]	minimum subgroup size for data collection per modem
10	[030]	maximum subgroup size for data collection per modem
2	[031]	adjustment factor for subgroup size
1	[032]	subgroup size per modem for recovery data collection
1	[033]	non-participating group operation subgroup size per modem
8	[034]	non-participating group operation interleave wait
1	[035]	installation verification subgroup size for group operations per modem
2	[036]	non dynamic subgroup size per modem (used for group data collection when 1 or 2 modems on system)
4	[037]	interleave wait adjustment factor
4	[038]	subgroup interval for getting modem statistics
100	[039]	midnight to 1 am hour load factor (% of telephone system load)

Default Value	Line Number	Explanation
100	[040]	1 am to 2 am hour load factor (% of telephone system load)
100	[041]	2 am to 3 am hour load factor (% of telephone system load)
100	[042]	3 am to 4 am hour load factor (% of telephone system load)
100	[043]	4 am to 5 am hour load factor (% of telephone system load)
100	[044]	5 am to 6 am hour load factor (% of telephone system load)
100	[045]	6 am to 7 am hour load factor (% of telephone system load)
100	[046]	7 am to 8 am hour load factor (% of telephone system load)
100	[047]	8 am to 9 am hour load factor (% of telephone system load)
100	[048]	9 am to 10 am hour load factor (% of telephone system load)
100	[049]	10 am to 11 am hour load factor (% of telephone system load)
100	[050]	11 am to noon hour load factor (% of telephone system load)
100	[051]	noon to 1 pm hour load factor (% of telephone system load)
100	[052]	1 pm to 2 pm hour load factor (% of telephone system load)
100	[053]	2 pm to 3 pm hour load factor (% of telephone system load)
100	[054]	3 pm to 4 pm hour load factor (% of telephone system load)
100	[055]	4 pm to 5 pm hour load factor (% of telephone system load)
100	[056]	5 pm to 6 pm hour load factor (% of telephone system load)
100	[057]	6 pm to 7 pm hour load factor (% of telephone system load)

Default Value	Line Number	Explanation
100	[058]	7 pm to 8 pm hour load factor (% of telephone system load)
100	[059]	8 pm to 9 pm hour load factor (% of telephone system load)
100	[060]	9 pm to 10 pm hour load factor (% of telephone system load)
100	[061]	10 pm to 11 pm hour load factor (% of telephone system load)
100	[062]	11 pm to midnight hour load factor (% of telephone system load)
N	[063]	midnight to 1 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[064]	1 am to 2 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[065]	2 am to 3 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[066]	3 am to 4 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[067]	4 am to 5 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[068]	5 am to 6 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[069]	6 am to 7 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[070]	7 am to 8 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[071]	8 am to 9 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[072]	9 am to 10 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[073]	10 am to 11 am hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[074]	11 am to noon hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[075]	noon to 1 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)

Default Value	Line Number	Explanation
N	[076]	1 pm to 2 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[077]	2 pm to 3 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[078]	3 pm to 4 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[079]	4 pm to 5 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[080]	5 pm to 6 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[081]	6 pm to 7 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[082]	7 pm to 8 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[083]	8 pm to 9 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[084]	9 pm to 10 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[085]	10 pm to 11 pm hour operation (C=data collection, P=Non-Partic Poll, N=none)
N	[086]	11 pm to midnight hour operation (C=data collection, P=Non-Partic Poll, N=none)
F	[087]	indicated whether dynamic encryption will be performed
30	[088]	% of hangup errors allowed on a modem
T	[089]	participating operation enabled (T = save list of convs that call in, F = no participating op)
T	[090]	Autodetect faulty modems (T=enabled, F=disabled)
5	[091]	Inoperative level for faulty modem)# calls rcvd by higher mdm in rotary to label mdm with 0 calls faulty

Explanation of Individual Lines in the FONE Configuration File

This section explains the individual lines in the FONE configuration file. The explanation lists both the valid and default value.

[001] IPPV software version. Site upgrade date: [date of the update]

Valid value is date of the update

[002] Time connect - time (secs) that converter will wait for system to communicate with it (downloaded)

The time in seconds that a STARFONE converter waits for the system to communicate with it before hanging up. This is downloaded at initialization time and is used by all STARFONE converters.

Valid values are 0 (zero) through 127
Default value is 18

[003] Line request - flag indicates whether the line request detection feature is activated (downloaded)

The line request flag indicates whether or not the line request detection feature of the telephone converters is activated. If activated, the telephone converter monitors the phone line it dials out on for an off-hook condition. If the line is detected as off-hook, the converter stops dialing. This parameter is down-loaded at initialization time and is used for all STARFONE converters.

Valid values are T (enabled) or F (disabled)
Default value is T

[004] Summary debug - controls whether summary table, purchase statistics for group operation are logged

The summary debug parameter controls whether (T) or not (F) the summary tables for group operations (including purchases summary) are logged on the console.

Valid values are T (enabled) or F (disabled)
Default value is T

[005] Dial activity debug - controls whether telephone activity is logged for dial commands

The dial activity debug parameter controls whether (T) or not (F) logging of telephone dial command activity is performed.

Valid values are T (enabled) or F (disabled)
Default value is F

[006] Responding activity debug - controls whether telephone activity is logged for responding messages

The responding activity debug parameter controls whether (T) or not (F) the logging of telephone respond connection activity is performed.

Valid values are T (enabled) or F (disabled)
Default value is F

[007] Baud - baud rate for the telephone modems

The baud parameter is the baud rate for the telephone modems. Although this field will accept 1-1200, **DO NOT CHANGE THIS PARAMETER**. It should always be 300.

Valid values are 1-1200
Default value is 300

[008] Log # purch - log purchase update progress every (log # purch) purchase processed - (0 = no purchase logging)

The log # purchases parameter is the increment for the logging of purchases as they are processed into the purchases database after the telephone communication phase of a data collection completes. If this is set to 1, every record is logged on the console as it is processed. If it is set to 0 (zero), no logging is done.

Valid values are 0 (zero) through 100
Default value is 10

[009] After carrier delay - time (1/60 sec) that system will wait after detecting carrier on line before communicating

The after carrier delay is the time (in sixtieths of a second) that the system waits after detecting carrier on a line before asking the converter for its address (SUBID or CONVID). This allows the modem in the telephone converter sufficient time to "settle out" after obtaining a carrier so that it can respond to the send address request.

Valid values are 1 through 255
Default value is 25

[010] Modems - number of modems ports((converter connector task (CCT tasks)) on the system (max = 16)

The modems parameter specifies the number of ports (modems) that are in the system. This field will accept values of 0 (zero) to 16. However, only 24 modems can be configured through the single mux card furnished with the ACC-4000. Consult with General Instrument prior to installing more than 24 modems.

Valid values are 0 (zero) through 224
Default value is 1

[011] Number of telephone numbers - number of telephone numbers assigned to converters (max = 10)

The phone numbers parameter specifies the number of phone numbers that the telephone converters use. This parameter is followed in the configuration file by the phone numbers themselves, one to a line. It is REQUIRED that the maximum allowable number of phone numbers (currently ten) ALWAYS be listed in the file. For example, even if there are only two phone numbers, then the next eight lines must contain dashes for the unused phone numbers parameters.

Valid values are 0 (zero) through 10
Default value is 0 (zero)

[012] to [021] 1st telephone number - use fone index of 1 (in converter's record) to assign converter phone #

Each phone number must be 10 digits long. Dashes must be used for unused phone numbers.

Valid values are 10 digits. Fill in unused spaces with dashes.
Default value is ----------

[022] Diag timeout - time (secs) used to timeout a single diagnostics operation

The diagnostic timeout is the amount of time (secs) to wait for converter to call into the system. If converter does not call in within the time given, the screen displays an error.

Valid values are 1 through 255
Default value is 60

[023] CCT task retries - num of retries during phone communication by CCT tasks

The CCT driver retries is the number of retries during phone communication by the CCT driver.

Valid values are 0 (zero) through 5
Default value is 0 (zero)

[024] CCT task two-way timeout period

The CCT driver two-way timeout parameter is the time period the CCT driver waits for data from the telephone converter.

Valid values are 2 through 15
Default value is 14

[025] Initial interleave wait for all operations in seconds

The initial interleave wait is the starting interleave wait value for data collection to be used before any modem statistics have been received.

Valid values are 5 through 400
Default value is 40

[026] Minimum interleave wait for all operations in seconds

The minimum and maximum interleave wait parameters form the boundaries for the interleave wait values determined by the self adjusting call-in algorithm. This algorithm adjusts the subgroup size and interleave wait time based on the level of telephone lines/modems activity. These two parameters prevent the algorithm from calculating desired values for the interleave wait per modem outside of the desired range. If the system manager does not want the value for the interleave wait to change, then set the interleave wait adjustment factor to 0 (zero) and the initial interleave wait will be used for the group operation.

Valid values are 5 through 200
Default value is 10

[027] Maximum interleave wait for all operations in seconds

The maximum interleave wait (see minimum interleave wait).

Valid values are 5 through 400
Default value is 300

[028] Initial subgroup size for data collection per modem

The initial subgroup size is the starting subgroup size value for the data collection to use before any modem statistics have been received.

Valid values are 1 through 100
Default value is 1

[029] Minimum subgroup size for data collection per modem

The minimum and maximum subgroup size parameters form the boundaries for the subgroup size values determined by the self adjusting call-in algorithm. This algorithm adjusts the subgroup size and interleave wait time based on the level of telephone lines/modems activity. These two parameters prevent the algorithm from suggesting undesired values for the subgroup size. If the system manager does not want the value for the subgroup size to change, then set the subgroup size adjustment factor to 0 (zero) and the initial subgroup size will be used for the group operation.

Valid values are 1 through 25
Default value is 1

[030] Maximum subgroup size for data collection per modem

The maximum subgroup size (see minimum subgroup size).

Valid values are 1 through 100
Default value is 10

[031] Adjustment factor for subgroup size

The adjustment factor for subgroup size determines the speed of the adjustment of the subgroup size value by the call-in algorithm. If this value is 0 (zero), then the initial subgroup size is used for the group operation (no dynamic calculation).

Valid values are 0 (zero) to 5
Default value is 2

[032] Subgroup size per modem for recovery data collection

The subgroup size per modem for recovery data collection is the number of converters (per modem) commanded to dial at one time. The field will accept numbers 1 to 10. However, it is recommended this **value always be one** because every converter (within a range) is commanded to call into the system.

Valid values are 1 through 10
Default value is 1

[033] Non-participating group operation subgroup size per modem

The non-participating group operation subgroup size is the value used during this group operation. During the non-participating poll, all converters commanded to dial are expected to call into the system. The value is the number of converters (per modem) commanded to dial at one time. It is recommended this **value always be one** because every converter (within a range) is commanded to call into the system.

Valid values are 1 through 10
Default value is 1

[034] Non-participating group operation interleave wait

The non-participating group operation interleave wait is the delay time between commanding groups of converters to call in during this group operation. The value is constant since no purchases are collected during this operation.

Valid values are 5 through 50
Default value is 8

[035] Installation verification subgroup size for group operations per modem

The installation verification subgroup size is the value to be used during this group operation. During the installation verification, all converters commanded to dial are expected to call into the system. The value is the number of converters (per modem) commanded to dial at one time. It is recommended this **value always be one** because every converter (within a range) is commanded to call into the system. (This feature is not yet implemented.)

Valid values are 1 through 10
Default value is 1

[036] Non dynamic subgroup size per modem (used for group data collection when 1 or 2 modems on system)

The non dynamic subgroup size per modem (used for group data collection) when one or two modems are on the system.

Valid values are 1 through 50
Default value is 2

[037] Interleave wait adjustment factor

The interleave wait adjustment factor determines the speed of the adjustment of the interleave wait value by the call-in algorithm. If this value is 0 (zero) then the initial interleave wait is used for the group operation (no dynamic calculation).

Valid values are 0 (zero) through 5
Default value is 4

[038] Subgroup interval for getting modem statistics

The subgroup interval for getting the modem statistics parameter represents the number of subgroups that are commanded to dial before the latest modems statistics are again requested.

Valid values are 1 through 1000
Default value is 4

[039] to [062] Midnight to 1 am hour load factor (% of telephone system load)

The phone system load is percentage of telephone system load holds the hourly load factor values for all group operation telephone activity. These allow a group operation to automatically adjust its level of use of the telephone lines/modems based on the time of day. The 24 hour adjust parameters on a percentage basis. For example, if the parameter is 60, then the telephone activity during a group operation should keep 60% of the modems busy.

Valid values are 0 (zero) through 100
Default value is 100

[063] to [086] Midnight to 1 am hour operation (C=data collection, P=Non-Partic Poll, N=none)

The background operations 24 hour parameters indicate which background operation is to be run during the given hour. Background operations include data collection (C) and non-participating poll (P). If no background operation is to be run during a particular hour, an N is entered.

Valid values are C (data collection), P (non-participating poll), or N (none)
Default value is N

[087] Indicated whether dynamic encryption will be performed

The dynamic encryption indicated whether (T) or not (F) dynamic encryption will be performed.

Valid values are T (enabled) or F (disabled)
Default value is F

[088] Percentage of hangup errors allowed on a modem

The percentage of hangup errors allowed per modem parameter is the percentage of hangup errors to total calls on a modem before the modem is flagged as a noisy modem on the modem status display screen.

Valid values are 0 (zero) through 100
Default value is 30

[089] Participating operation enabled (T = save list of convs that call in, F = no participating op)

This enables or disables the non-participating converters operation.

Valid values are T (save list of converters that call in) or F (no participating operation enabled)
Default value is T

[090] Autodetect faulty modems (T=enabled, F=disabled)

This enables or disables the automatic faulty modem detection function. For this function to perform properly, it is assumed that the system has a rotary telephone setup, and that modems are connected so that they correspond to the VMLs (that is, the first modem in rotary is VML #0, for example).

Valid values are T (enabled) or F (disabled)
Default value is T

[091] Inoperative level for faulty modem (number of calls received by higher modem inn rotary to label modem with 0 calls faulty)

The parameter for the calls the next modem on the rotary can receive is used by the automatic faulty modem detection function in declaring a modem inoperative.

Valid values are 0 (zero) through 5000
Default value is 5

10 • Pay Service Loader

Introduction

This chapter describes the operation and setup of the Pay Service Loader (PSL) program. PSL is a package of programs allowing information to be downloaded to the ACC-4000 from the host (billing system) through the wire link, or from the pay service providers (such as CVS, Request, and Viewers Choice) through a standard file transfer mechanism such as Kermit. This electronic transfer of information eliminates the need to manually enter pay service data into both the host and your controller.

The downloaded pay service input file must include the Service Number, Provider, Channel Schedule Start Date and Time, and Event Description. It can also contain additional optional fields. We discuss all of the input file fields later in this chapter.

PSL performs the following functions:

- Every five minutes (a configurable parameter) checks for data files to process. If there is input, PSL reads the data file, validates the contents, divides the input into a set of schedule files (one per channel), and sorts the files into date/time order.

- Once a day, awakens and deletes expired pay services and channel schedule entries of a given age, then replaces them with new events.

- In response to a request from your terminal, performs the above delete and add function. This request is initiated by the PSL Batch Utility. If you need detailed instructions on running the PSL Batch Utility, see *Volume II, Chapter 6, Services/Schedules.*

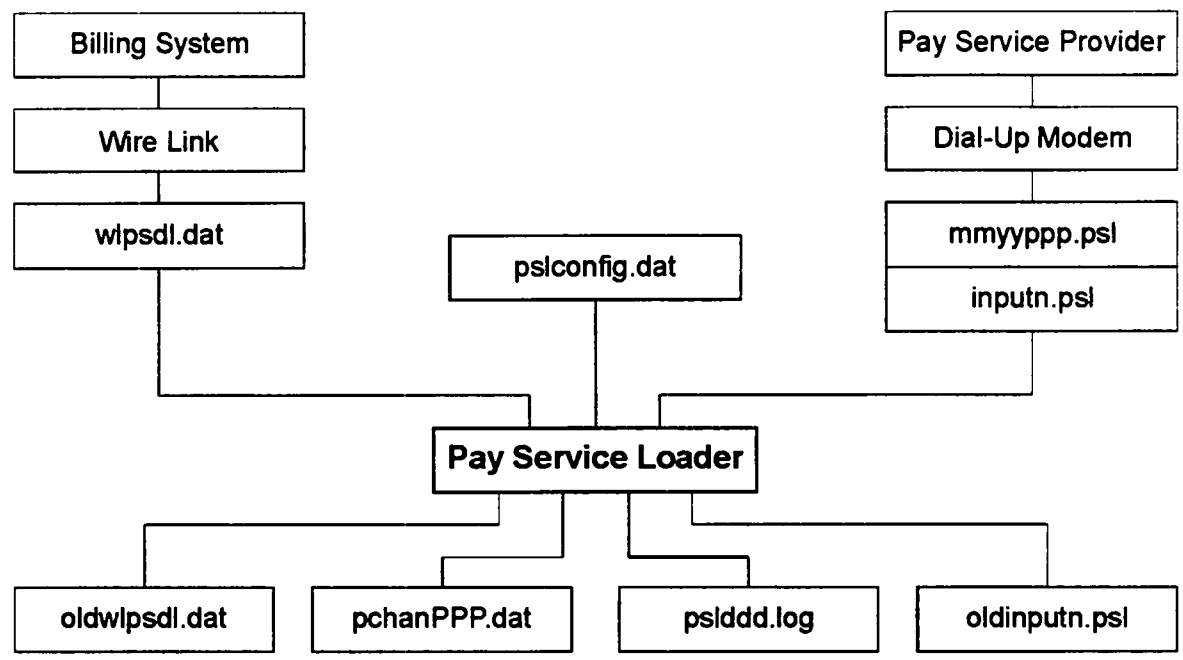
- In response to a request from your terminal, deletes selected services by Service Number or selected ranges of Service Numbers. This request is initiated by the PSL Batch Utility.

PSL Daily Log Files

PSL maintains seven daily log files, one for each day of the week. These files record the services PSL has processed in the past week, and also contain status messages, making them useful for diagnosing problems. These file names are in the format pslddd.log, where ddd are the first three letters for a day, in lower case. Thus the logs are called pslmon.log through pslsun.log.

Data Flow through Input and Output Files

PSL uses a number of files to do its job. The following diagram shows the data flow through these files:



Data Flow Through Input and Output Files

PSL awakens after the number of minutes that you specify in the configuration file to determine if an input file, either inputN.psl (where N is a single-digit integer, having a range of 1 through 9) or wlpsdl.dat, was downloaded. When an input file is present, PSL processes each of its records and determines whether they should receive real-time or batch processing.

For batch processing, each record gets placed into an appropriate holding file, pchanPPP.dat, where PPP indicates the associated pay service provider, for example CVS. An input record overwrites any existing record having a matching Service Number in the file. After splitting the input file into pchanPPP.dat files, these files are time-sorted and the downloaded input file gets renamed as oldinputN.psl or oldwlpsdl.dat, indicating that it was processed.

A few minutes after downloading an input file, you should look at the Logger window to make sure that it was processed properly. If there were any problems with the input file, error messages are displayed at the first PSL wake-up interval (pslconfig.dat parameter [1]) after the file renaming. PSL discards erroneous records, so be sure to check for messages. If this file is coming through the wire link, it may take up to twenty minutes to process.

File Naming Conventions

The file naming conventions used by some pay service providers let you retain and reference an input file after processing. The downloaded data file name is mmyyppp.psl, for example 0494cvs.psl, for April, 1994, from CVS. When the download is complete, the file is

copied to inputN.psl, the name expected by PSL. After processing, this file is automatically renamed to oldinputN.psl.

Reports

PSL works with pay services and channel schedules. The many reports we provide that deal with these areas also apply to PSL. In brief, these reports are READPS, DBSORTPS, PSLPRINT, and the various channel schedule reports. Also see *Volume II, Chapter 6, Services/Schedules* for information on displaying all pay services.

PSL's Daily Activity

PSL's job is to wake up every day at a specified time to delete expired events and add new ones. PSL deletes events that meet the age criteria specified in parameter [2] of the PSL configuration file. It adds new services from its sorted holding files (pchanPPP.dat) in a round-robin fashion. It keeps adding events until it fulfills the number of load-ahead days specified in parameter [3] of the PSL configuration file, or until it fills up the Pay Service Common. The limit on the Pay Service Common is 1000 services. PSL will stop at 950 services (configurable), leaving you room to enter any special events or package components. Finally, PSL logs all of its actions to the logger window and to the daily log file so that you can monitor its progress.

These daily PSL operations, once configured, are automatic. You only have to check for errors and keep PSL supplied with input.

Your Responsibilities

For proper PSL operation, your responsibilities are to:

- Make sure that good input files get downloaded on a regular basis as required by your site (for example, weekly or monthly), to prevent running out of events.

- Check the logger window *immediately* after PSL processes the input files. If there are any error or warning messages, have the problems resolved by your pay service provider.

- Check the PSL daily log files to verify correct PSL operation. If there are any error messages, research and resolve the problem. If you are unable to resolve a problem, contact our Technical Response Center at 1-800-537-7653 for assistance.

- Run the appropriate reports (such as READPS, DBSORTPS, and others) to verify that the data sent was processed correctly.

- Plan ahead for new channels that you will be launching. Call our Technical Response Center at 1-800-537-7653 in advance, allowing us enough time to configure PSL to handle the new channels.

Setting up PSL

The following sections provide information on setting up PSL in preparation for accepting downloaded input files. Because of the many inter-related features of PSL and your controller, we strongly recommend that General Instrument personnel configure your system for PSL. For new installations, our field engineers often set up PSL during the first week of operation. For other sites, our Technical Response Center (1-800-537-7653) will help you to configure your system. The configuration parameters mentioned below are described in *Chapter 8, Pay Service Loader Configuration File.*

Setup for Pay Service Deletions

Our engineers usually first turn on deletes for you, in one of two ways:

1. They can set PSL configuration file parameter [7] Kill Expired Events On Any ACC-4000 Channel to T. This deletes any events having a date older than the PSL configuration file parameter [2] Number Of Days To Hold Expired Services.

2. Or they can turn deletes on for each of the pay services in the pay channel description section ([XXX-1] through [XXX-18]) of the PSL configuration file, where XXX is the three-character provider name, such as CVS. When parameter [XXX-4] Auto Delete, is set to T, PSL automatically deletes the expired events matching that channel number.

Both ways require setting PSL configuration parameters [D-1] through [D-7] (time of day to wake up), and parameter [2] Number Of Days To Hold Expired Services. The second method requires setting parameter [XXX-2] Pay Service Channel Specification as well.

Once these parameters are set, use PSL Batch Utility option five, Read configuration file PSLCONFIG.DAT, to tell PSL to read its new configuration parameters. Deletes then run once a day at the specified time. If you need detailed instructions for running the PSL Batch Utility, see *Volume II, Chapter 6.*

Setup for Pay Service Additions

Pay service additions take place on a channel-by-channel basis. First, our engineers must set up PSL configuration parameters ([XXX-1] through [XXX-18]), as well as the following ones:

- Parameter [3] Number Of Days Ahead To Pre-load Services, tells PSL how many days in the future to load events into the pay service file.

- Parameters [L-1] through [L-12] Map Load Time, are for any special load times. These only have to be changed if there is a Service Code limitation requiring them to recycle more often than the default of three times a day.

- In parameter [XXX-1] Pay Service Provider Name, the three-character provider name must match the provider name in the downloaded input file. All three characters are

required, and blanks are not allowed. Proper examples include CVS, VEW, VC2, or RQ1.

- Parameters [XXX-7] Local Service Numbers Defined, [XXX-8] Starting Service Number, and [XXX-9] Ending Service Number: parameter [XXX-7] should almost always be set to F; even so, the starting and ending Service Numbers should be present for documentation purposes.

- Parameters [XXX-10] Local Service Codes Defined, [XXX-11] Starting Service Code, [XXX-12] Ending Service Code, [XXX-13] Secondary Starting Service Code and [XXX-14] Secondary Ending Service Code: parameter [XXX-10] Local Service Codes Defined, is almost always set to T. We recommend using 12 Service Codes, plus four secondary Service Codes.

  PSL uses a secondary Service Code when adding events where the Service Code is already in use (they are both active in a portion of the active window). PSL tries to correct this by assigning a secondary Service Code to the new event being added. This is successful if no further overlap occurs. If an overlap still occurs, PSL tries the next successive secondary Service Code until it succeeds or it uses up all secondary Service Codes.

- Parameters [XXX-15] Local DSE Scheduling, [XXX-16] Channel Preview Time, and [XXX-17] Purchase Time: these parameters set the amount of preview and purchase time for IPPV converters.

- Parameter [XXX-18] Event Scramble Mode.

If PSL has never run, it is possible that the next Service Code to be used must be reset. PSL stores the next Service Code in a task-specific area on disk, which it accesses on reboot. When PSL runs for the first time, it tries to use [XXX-11] Starting Service Code. The Service Code must be reset if the last Service Code used prior to PSL causes a Service Code overlap with the first Service Code to be used.

For example, let us assume that the range of Service Codes that CVS uses is 193 through 208. The primary Service Codes are 193 through 204 and the secondary Service Codes are 205 through 208. The last Service Code used was 196 (we can tell this by looking at the readps.dat display for that channel). The first time PSL runs, it tries to start adds at Service Code 193. This will cause an overlap. Instead, the next Service Code must be reset to 197, so that PSL picks up where the old method left off.

PSL uses the secondary Service Codes (sometimes called bounce tags) when there is an overlap problem. In most cases it corrects for the Service Code overlap without operator intervention. But in our example above, if PSL is not told the proper Service Code to use at the start, then it will probably use up all of its secondary Service Codes. Avoid this problem by using the PSL Batch Utility, option 8 (Set Start Tags for Services Adds), to set the proper starting Service Code. If

you need detailed instructions on the PSL Batch Utility, see *Volume II, Chapter 6, Services/Schedules.*

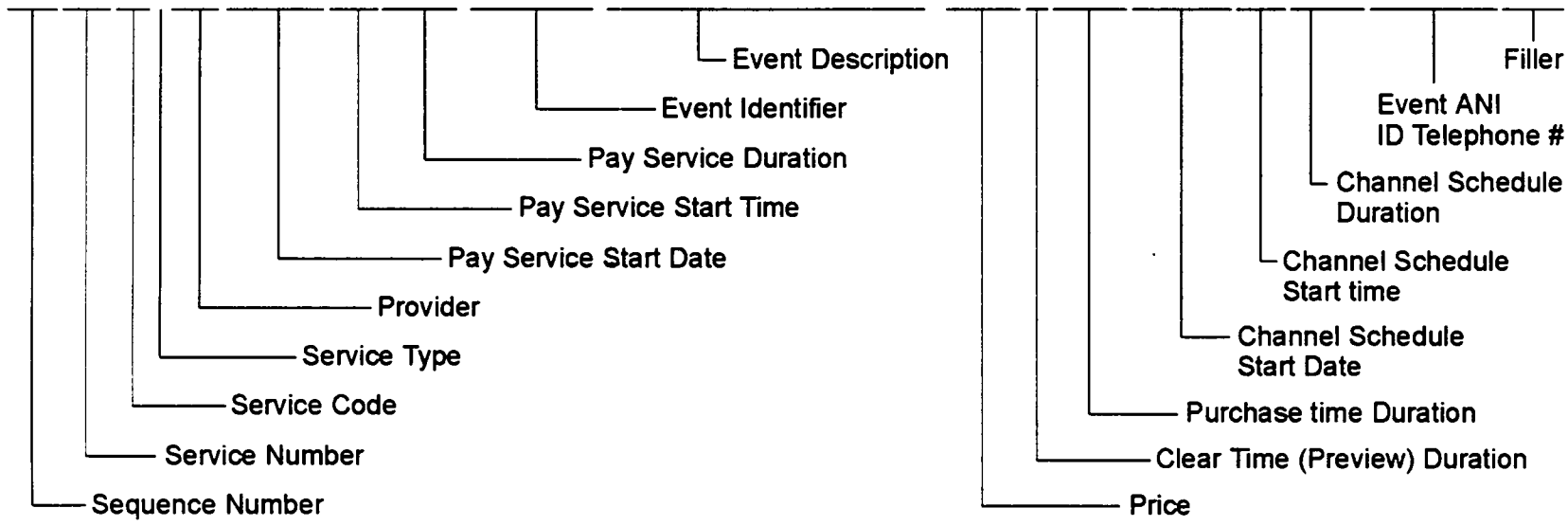
Downloaded Input Files

This section shows a sample downloaded input file, explains its record format, and discusses PSL record validation.

Sample Input File

This is a sample input file:

```
01531243197ECVS10131993113000 1600/DC2459011/DC2459011/ALIVE                0003950700003510141995003000021300000000000000000
01541244198ECVS10131993140000 1600/DC2440005/DC2440005/SCENT OF A W         0003950700003510141995030000024000000000000000000
01551245199ECVS10131993183000 1500/DC2457015/DC2457015/HOMEWARD B           0003950700003510141995073000012900000000000000000
01561246200ECVS10131993200000 1500/DC2465010/DC2465010/CB4                  0003950700003510141995090000013800000000000000000
01571247201ECVS10131993220000 1500/DC2471007/DC2471007/ZEBRAHEAD            0003950700003510141995110000015300000000000000000
01581248202ECVS10141993000000 1600/DC2459012/DC2459012/ALIVE                0003950700003510141995130000021300000000000000000
01591249203ECVS10141993023000 1500/DC2460012/DC2460012/POINT OF NO R        0003950700003510141995153000015900000000000000000
01601250204ECVS10141993043000 1500/DC2468008/DC2468008/THE TEMP             0003950700003510141995173000014400000000000000000
01611251193ECVS10141993063000 1600/DC2454009/DC2454009/PASSION FISH         0003950700003510141995193000022500000000000000000
01621252194ECVS10141993090000 1500/DC2441007/DC2441007/GROUNDHOG            0003950700003510141995220000014500000000000000000
```



Sample Input File

Input File Record Format

The wlpsdl.dat and inputN.psl files are comprised of ASCII records uniquely identifying events to be offered through your controller. The file is a logical combination of the pay service and channel schedule records. PSL splits the file into a set of holding files, one for each channel.

The following table serves as a quick reference, describing the format of the downloaded input file records. Optional fields are noted — we recommend having PSL configured to supply values for these fields.

#	Field	Size	Optional	Format or Value
1	Sequence Number	4 digits		
2	Service Number	4 digits		
3	Service Code	3 digits	Y	
4	Service Type	1 alpha character		*Must* be E, for event.
5	Provider	3 alphanumeric characters		
6	Pay Service Start Date	8 digits	Y	MMDDYYYY For example: 01051994
7	Pay Service Start Time	4 digits	Y	HHMM For example: 1800
8	Pay Service Duration	6 digits	Y	00HHMM For example: Two hours = 000200
9	Event Identifier	10 alphanumeric characters	Y	
10	Event Description	30 alphanumeric characters		
11	Price	6 digits	Y	For example: 000395 = $3.95
12	Clear Time (Preview) Duration	2 digits	Y	MM For example: 07
13	Purchase Time Duration	6 digits	Y	00HHMM For example: 000035
14	Channel Schedule Start Date	8 digits		MMDDYYYY For example: 02011995
15	Channel Schedule Start Time	4 digits		HHMM
16	Channel Schedule Duration	6 digits		00HHMM
17	Event ANI ID Telephone Number	10 digits	Y	Not implemented.
18	Filler	5 digits	Y	00000, if used.

The following table describes more fully the fields appearing in the quick reference table above.

Field	Description
Sequence Number	A four-digit integer field having a range of values from 0001 through 9999. This is the line number for each record in the input file. PSL does not use this field; however, certain billing systems require it.
Service Number	A unique four-digit integer having a range of values from 1 through 8191. This is the link tying an event on the host to an event on your ACC-4000 Controller.
Service Code	An optional three-digit integer having a range of values from 2 through 255. We recommend that you configure PSL to ignore the downloaded value and generate the value at the time of the pay service load operation. The Service Code identifies the event for the scrambler.
Service Type	A single alpha character requiring a value of E, for event. *PSL only accepts events.*
Provider	A three alphanumeric character field specifying the pay service provider. These three characters must match exactly the three characters in your pslconfig.dat file, parameter [XXX-1]. PSL uses those three characters to map a provider to a channel. Blanks are not allowed. We *do not* recommend using a channel (like A21) as a provider. It is better to use the pay service provider's name, such as CVS or REQ. This makes it easier to maintain when making future changes to channel numbers.
Pay Service Start Date	An optional eight-digit integer field having the format MMDDYYYY, indicating the start date of the transmission of authorization lists for the service. Normally, PSL is configured to ignore this field. Instead, PSL calculates its own Pay Service Start Date, Pay Service Time, and Pay Service Duration by a formula it uses in conjunction with values in the pslconfig.dat file.

Pay Service Start Time	An optional four-digit integer field having the format HHMM, indicating the start time in hours and minutes for the transmission of authorization lists for the service, based on a 24-hour clock. Normally PSL is configured to ignore this field, just like the Pay Service Start Date described above.
Pay Service Duration	An optional right-justified, six-digit integer field having the format 00HHMM, indicating the amount of time in hours and minutes that the authorization lists will be transmitted for the service. The two leading zeroes are specified because the current maximum Pay Service Duration on the ACC-4000 Controller is 99 hours and 59 minutes.
Event Identifier	An optional ten alphanumeric character field containing unique event billing information from the pay service provider. For example, /FV0436000. Some hosts use this for event identification during a purchase upload.
Event Description	A 30 alphanumeric character field, indicating the title of the event.
Price	An optional six-digit integer field, indicating the purchase price of the event. For example, 000395 denotes a price of $3.95.
Clear Time (Preview) Duration	An optional two-digit integer field having the format MM, indicating number of minutes after the service starts that the scrambler transmits unscrambled video on the channel. This is also known as the preview period, since it allows subscribers to view the event for a period of time before a purchase decision must be made.
Purchase Time Duration	An optional six-digit integer field having the format 00HHMM, indicating the amount of time, in hours and minutes, that the event is purchasable. For example, 000135 represents one hour and 35 minutes.
Channel Schedule Start Date	An eight-digit integer field having the format MMDDYYYY, indicating the viewing start date of the event. For example, 01051994 represents January 5, 1994.

Channel Schedule Start Time	A four-digit integer field having the format HHMM, indicating the viewing start time for the event, based on a 24-hour clock.
Channel Schedule Duration	A six-digit integer field having the format 00HHMM. This indicates the amount of time in hours and minutes that the event gets shown on the channel.
Event ANI ID Telephone Number	This optional ten-digit integer field is not implemented. It can be filled with blanks or zeroes.
Filler	An optional five-digit integer field. When used, the value is 00000, five ASCII zeroes.

Validation of Input Records

When PSL receives an input file (wlpsdl.dat or inputN.psl) in the format described above, it performs the following checks on the records:

- Verifies the pay service provider name
- Verifies that channel schedules do not overlap
- Verifies the format of each record in the file

When a record violates one of these checks, PSL rejects it and writes an error message to both the PSL daily log file and Logger window.

PSL Batch Utility

You can access the PSL Batch Utility from the Services/Schedules option of the Main Menu of Screen Options. It is easy to use and gives you interactive access to PSL via the following menu options:

- Delete old and add new services from PSL files
- Add new services from PSL files
- Specify services to delete by Service Number
- Specify ranges to delete by Service Number
- Read configuration file pslconfig.dat
- Fix time/date blockage on automated delete
- Set start Service Numbers for service adds
- Set start tags for service adds
- Exit and execute requested commands
- Exit without executing commands

Typically, you do not run the PSL Batch Utility options unless:

- There is a problem with the pay services
- There is a system problem
- You make a change to the PSL configuration file
- PSL is being turned on for the first time

If you need detailed instructions on the PSL Batch Utility, see *Volume II, Chapter 6, Services/Schedules.*

Wire Link Considerations

The wire link is one of the possible sources of input to PSL. Through it, the billing system can send pay service and channel schedule information in download records, called 330 commands. These records are received by the wire link and put into a file called wlpsdl.new (wlpsdl stands for wire link pay service download). When the download is complete, the wire link closes the file and names it wlpsdl.dat, the name expected by PSL. It is then up to PSL to validate the input records. It is important to note that the wire link only checks for proper transmission characteristics (checksum and packet sequencing, for example). It is up to PSL to validate the actual contents of the download records.

The wire link is able to accept all its other commands from the billing system while the pay service download is in progress. Other commands can be interspersed as much as the billing system allows.

The wire link protocol calls for an end-of-file record from the billing system when it is done sending 330 commands. This record is just a 330 command with a special status bit set, but some billing systems do not send it. So the wire link has a feature allowing it to close the file anyway after a specified amount of time since the last 330 command has been received. We can configure this timeout value, which is typically set to 10 minutes.

Event Authorizations

Some billing systems send the 330 commands, which define an event to the ACC-4000, then immediately send authorizations (purchases) for those same events. Since PSL will not have processed the 330 commands that quickly, the wire link and a program called PPV Manager have a joint feature that stores those authorizations until after PSL has actually added the events. The actual workings are that the wire link notes when a series of 330 commands starts. From that time, any pay-per-view authorization (294, 296 commands) will be attempted immediately, as usual. But any of those commands that fail will be put into a buffer to be retried later. The next time PSL finishes its add phase, it sends a message to the PPV Manager to retry all those stored authorizations.

Pay Service Uploads

Some billing systems have a pay service upload feature. You can generate a pay service upload file from your ACC-4000 Controller in two ways. One way is by running PSLPRINT and entering the name of the input file, 1294cvs.psl for example, as the file name to process. Another way is by running the DBSORTPS utility. The DBSORTPS output file, using option 91 or 94, is called wlpsul.dat, and is used automatically in pay service uploads. Once you have created the upload file on the ACC-4000, use the billing system to start the actual upload data transfer.

Messages

This section lists many PSL messages that can be generated during various operations, gives an explanation of them, and provides any corrective actions that you should take. If you encounter a message not listed here, contact our Technical Response Center at 1-800-537-7653 for assistance.

Possible Messages During Service Additions

Duplicate Service Number Encountered

Meaning: PSL generates this message on attempting to add a pay service having a Service Number duplicating that of an existing service. This can only occur when the PSL configuration parameter [A22-7] Local Service Numbers Defined is set to T, indicating that PSL is to generate the values of the Service Numbers being added. When the flag is set to F, and PSL is using Service Numbers generated by the pay service provider, the detection of a duplicate by PSL is viewed as a service replacement.

Corrective Action: Verify that the existing service in the pay service file is obsolete, and delete it if so. If not, use the PSL Batch Utility to change the current Service Number to be added to the appropriate channel to a value that does not cause a conflict. For information on this utility, see *Volume II, Chapter 6, Services/ Schedules.*

*** Service Number Max Exceeded: 8191

Meaning: PSL generates this message during the add process when a downloaded pay service has a Service Number greater than 8191, the maximum value allowed by your controller.

Corrective Action: Inform the pay service provider of the error.

*** lpppayservice (dbet) Failed on duplicate check nnn

Meaning: PSL generates this error when it determines, by consulting the Pay Service Common, that the service about to be added is actually a replacement of an existing service. On attempting to access the corresponding record in the pay service file, a database error is encountered — it is the number of this error message that is logged.

Corrective Action: Retry the add one more time via option two of the PSL Batch Utility. For detailed instructions on this utility, see *Volume II, Chapter 6, Services/Schedules*. If this attempt is not successful, contact our Technical Response Center at 1-800-537-7653.

***** DSE Record Not Found**
Channel = nnn

Meaning: PSL generates these messages when it determines that the scrambler specified in the pslconfig.dat file for the given channel does not exist in the controller's DS/E file.

Corrective Action: Either add the scrambler to the database or edit the pslconfig.dat file.

Split file open error: nnn

Meaning: This message indicates that PSL encountered an error on attempting to open one of the pchanPPP.dat files that contain pay service information loaded during the add process. This often means, especially for a new channel, that the file is missing. The error number indicates the input or output (I/O) error encountered.

Corrective Action: Usually you do not have to take action, as the message goes away once there is input for that new channel. If the file is present, but locked for some reason, contact our Technical Response Center at 1-800-537-7653.

Validation Error: No PSL channel file associated with this name:xxx.

Meaning: The three character provider string in the input record did not match any of those in the pslconfig.dat file.

Corrective Action: Most often this happens when you launch a new channel, but forget to have PSL configured to accept the new channel.

Otherwise this happens when there is a format problem in the input file. Scrutinize the input file to see why the record is incorrect. Sometimes there is a transmission error that shifts all records by a few character positions or truncates the last record. Correct the error and resend the input.

Skipping service too old to be loaded: nnn

Meaning: This is an informational message, indicating that events in the channel-specific holding files have start dates too far in the past to be loaded into the pay services during the add operation.

Adding service number: nnn

Meaning: This is an informational message, stating that the specified Service Number is being added to the controller's database.

Overlapping events on service code nnn
Overlap detected on service number nnn
Error occurred scanning Pay service common

Meaning: These messages indicate that PSL detected a conflict between the Service Code pay service list time of an existing pay service and that of a pay service about to be loaded. This means that two Pay Service Common records are in conflict with one another.

Corrective Action: Perhaps none, but see the following two messages discussed below. PSL tries to correct this problem, but you must verify that PSL was successful.

Corrected for overlap using secondary code: nnn

Meaning: This message indicates that PSL was able to resolve the error discussed above by using one of its configuration-specified secondary Service Codes for that channel as a replacement for the new event's Service Code that caused the conflict.

***** Event Overlap With Existing Active Event**

Meaning: This message indicates that PSL was unable to solve the Service Code pay service list time conflict discussed above via the secondary Service Codes, and that the pay service add process was terminated.

Corrective Action: Investigate the Service Number and Service Code to see why there is a conflict. If you find the cause of the problem, correct it with a new input file or with the PSL Batch Utility. For detailed instructions on this utility, see *Volume II, Chapter 6, Services/Schedules.* Otherwise, contact our Technical Response Center at 1-800-537-7653 for assistance.

Pay service adds: nnn

Meaning: This is an informational message. PSL generates this message at the end of the add process, indicating the total number of pay service and channel schedule entries that were added during the session.

Failed update of TASKS.IDX after add: status = nnn

Meaning: PSL generates this message on encountering an error while attempting to update its disk copy of the next Service Code and Service Numbers.

Corrective Action: Retry the add once. If this is not successful, contact our Technical Response Center at 1-800-537-7653 for assistance.

***** Backing Out Pay Adds**
***** Backing Out Channel Adds**

Meaning: PSL generates these messages on detecting an error during the add process and then backing out all events loaded during the session. The backout is only conducted if the pslconfig.dat file parameter [6] All Must Pass... is set to T.

***** DB PS delete error: nnn**
***** DB CS delete error: nnn**

Meaning: PSL generates these messages when the above mentioned back-out process encounters an error during the pay service or channel schedule delete operation.

Corrective Action: Contact our Technical Response Center at 1-800-537-7653 for assistance.

Out of heap when allocating new service tier record.
Out of heap when allocating new service cluster.

Meaning: These messages indicate that the operating system refused a request by PSL for more memory.

Corrective Action: Contact our Technical Response Center at 1-800-537-7653 for assistance.

Possible Messages During Time-Based Delete Processing

***** Scanning for old Pay Service/Channel Schedule Entries**
***** That are to be deleted**

Meaning: This message is informational, indicating that the timed delete operation has begun.

***** Pay services qualified for deletion = nnn**

Meaning: This message is informational, indicating that the timed delete operation is finished its scan for age-qualified events.

Deleting service number: nnnn

Meaning: This message is informational, indicating that PSL has deleted the given pay Service Number from the database.

Possible Messages During Batch Command File Processing

Service number not an event or subscription: nnn

Meaning: This message indicates that a deletion request contains an invalid Service Number, or one that it could not delete.

Corrective Action: Correct the Service Number and retry the batch deletion operation.

Time record deleting tracking fixed

Meaning: This message is informational, indicating that PSL is obeying the commands specified in the batch command file, batchpsl.cmd.

Possible Messages During Configuration File Processing

Error reading file PSLCONFIG.DAT: nnn
***** PSLCONFIG.DAT File Error nnn**

Meaning: This message indicates a problem occurred while accessing the PSL configuration file. The number given represents the I/O error encountered.

Corrective Action: Verify the presence and integrity of your pslconfig.dat file. The problem most commonly occurs when you have added an extra line to the file.

Failed init of TASKS.IDX: status = nnn

Meaning: This message indicates that a problem occurred with initializing the LDTASK of the database reserved for PSL.

Corrective Action: Contact our Technical Response Center at 1-800-537-7653 for assistance.

Possible Messages from the Headend Manager

*****HEMGR Rebuild Queues**
*****HEMGR Queue Rebuilt Successful**

Meaning: These messages is informational, indicating the end of the headend manager pay service re-build process requested by PSL.

Pay Service Re-builds Requested by PSL

*****Pipe mapping error**
*****Lpdirect Failed**
*****Lpback Problem**

Meaning: These messages indicate a serious problem with the pipe sub-system of the controller software.

Corrective Action: Contact our Technical Response Center at 1-800-537-7653 and request that they build the proper pipes.

*****HEMGR Queue Rebuild Failed, class:nnn**

Meaning: This message indicates that the headend manager task encountered a problem while re-building the Pay Service Common.

Corrective Action: Contact our Technical Response Center at 1-800-537-7653 for assistance.

Possible Messages from the DSEMGR

*****DSEMGR E No Service Number Found For Service Number nnn**

Meaning: This message is not from PSL, but from DSEMGR, and appears on the console and in the system log. It is generated when the DSEMGR tries to access the Pay Service Common while it is being rebuilt by PSL, so the DSEMGR cannot find any services.

Corrective Action: None. The problem fixes itself when the PSL is finished the rebuild.

Possible Messages During Pay Service Downloads

Non-event type detected.
Invalid event time detected.
Invalid event year detected.
Invalid event month detected.
Invalid event day detected.

Meaning: Any of the six messages indicate that PSL detected a problem in the format of the downloaded schedule files.

Corrective Action: Fix the input file and resubmit it to PSL.

File is already sorted.
Ending sort.

Meaning: These messages are informational, indicating the end of the sort operation executed on each pay service channel after the download was completed.

Out of heap when allocating a new sort record.

Meaning: This message occurs during the sorting of each pay channel split file after the service download is completed, indicating that the operating system refused a request from PSL for more memory.

Corrective Action: Contact our Technical Response Center at 1-800-537-7653 for assistance.

Channel schedule sequence problem on channel:nn
Problem detected on service number:nnn
Channel schedule overlaps existing service:nnn

Meaning: These messages indicate that the downloaded pay service schedule contains time conflicts between various events on the same channel. Two or more events overlap in time — these events are discarded and are not included in the add process.

Corrective Action: Do an analysis of the downloaded schedule and correct time conflicts. Re-download a corrected schedule.

Channel schedule getnext error:nnn

Meaning: This message indicates that during the time overlap check, a database error was encountered while scanning events in the channel schedule. An error having the value of four occurs when the database management system tries to get an empty channel schedule. This can happen when starting a new pay service channel or when a channel schedule was deleted.

Corrective Action: Retry the add one more time via option two of the PSL Batch Utility. For detailed instructions on this utility, see *Volume II, Chapter 6, Services/Schedules*. If this attempt is not successful, contact our Technical Response Center at 1-800-537-7653 for assistance.

Downloaded file contains event deletion requests.
Downloaded deletion request ignored service:nnn
Downloaded pay schedule file found, copying to PSL channel files.
Downloaded file contains current events, add process will be started.
File copy complete.

Meaning: These messages are informational, indicating the reaction by PSL to the various commands in the downloaded schedule file. Sometimes PSL ignores a downloaded command, as in the case of the second error message above, where PSL is not configured to perform requested deletions.

11 • Status Messages

Alphabetical Listing of Status Messages

The following alphabetical listing contains all status messages that can be generated by the ACC-4000 Controller. These are distinct from the logger messages that can appear in the Logger window. Messages beginning with an asterisk appear at the top of the list.

Message Number	Message Text
445	** PAY SERVICE COMMON NOT UPDATED BY HEADEND MGR **
1026	*** DSE QUEUES NOT UPDATED ***
468	*** Package added ***
024	****** Warning - Converter has not been cleared ******
2011	A classname record already exists with this name
1013	A DSE record already exists with this value as a key
216	Account Number Already In Use
215	Account Number Not In Use
371	Account Number Required
008	All Converters Cleared Of Collected Purchases
822	ALL reports have been canceled.
1138	All single operations in progress will be completed
114	An ID has not been selected
238	An Operator Name is needed
2009	An operator record already exists with this name
631	Another Poll in progress - Cannot perform this poll
442	Any Updated Channel Map List is not saved
2001	Are you sure you want to perform this deletion?; Enter 'Y'
1011	Attempt to read DSE scrambling mode failed
1010	Attempt to set DSE scrambling mode failed

Message Number	Message Text
1007	Attempt to verify DSE set mode failed
706	Authorization punch was successful for converter id#
506	Auto Table Updated. Will not currently be Used
507	Auto Test Table updated successfully
630	Automatic Non Responding Converter poll canceled
1201	Automatic Two-Way Converter Polling ALREADY disabled
1206	Automatic Two-Way Converter in progress CANCELED
1200	Automatic Two-Way Converter Polling ALREADY enabled
1203	Automatic Two-Way Converter Polling DISABLED
1202	Automatic Two-Way Converter Polling ENABLED
1205	Automatic Two-Way Converter Polling NOT DISABLED
1204	Automatic Two-Way Converter Polling NOT ENABLED
304	Available Services Table Invalid - Reload
029	Babbling Converter found. Convid
009	Babbling Converter Missed - Restart Test
032	Babbling Converter search failed
010	Babbling Converter Search Initialization Failed
035	Babbling converter search retries exhausted
1149	Background telephone operation NOT Enabled
1145	Background telephone operations Disabled
1144	Background telephone operations Enabled
1146	Background telephone operations NOT Disabled
1170	Background telephone operations NOT Disabled
511	Backup did not occur : backup on tape too recent to overwrite

Message Number	Message Text
513	Backup did not occur : i/o error
510	Backup did not occur : no tape was in the drive
512	Backup did not occur : tape not write-enabled
628	Bad Data Received from FONE
805	Bad return message received
504	Bad Task Name On Pipe
028	Beginning alternate algorithm
027	Beginning Babbling Converter search
910	BSG Value Required
411	Can Not Access Function At This Time-- Try Again Later
339	Can not delete service until valid service # entered
338	Can not exit until updates implemented
451	Can not schedule update of default converter file
1210	Can't update database enable/disable out of sync, resetting polsch
1154	Cancel Active group operation before search can begin
1169	Cancel at the terminal that requested malfunctioning
1168	Cancel at the terminal that requested non-participating
1166	Cancel at the terminal that requested the collection
1167	Cancel at the terminal that requested the verification
480	Cancel deletion of Pay services marked for delete
1130	Cancel from the terminal that requested the collection
1131	Cancel from the terminal that requested the poll
627	Cancel Key depressed - execution halted
015	Cancel key depressed -- operation canceled

Message Number	Message Text
1209	CANCEL only allowed during verify operation
1155	Canceling group operation already ended or canceled
232	Cannot access information - system locked
1101	Cannot access non-responding poll bitmap file
365	Cannot access screen while any Wire Link is running
1129	Cannot cancel a single telephone data collection
1133	Cannot cancel data collection/No collection running
1165	Cannot cancel group operation
1134	Cannot cancel poll/No poll running
040	Cannot Clear Control Key For This Converter Type
634	Cannot clear converters while a data collection is in progress
001	Cannot Clear Event Key On One-Way Converters
1102	Cannot create report output file
1140	Cannot disable cause group operation in progress
618	Cannot do Data Collection. No segments turned on
446	Cannot logon to system at this time
814	Cannot pause a report that is being printed
603	Cannot Perform Data Collection At This Time
632	Cannot poll both halves of the database
1118	Cannot read converter serial number
1117	Cannot read converter Sub ID
420	Cannot Schedule Task
1103	Cannot send report to the console
1152	Cannot start search because group operation Active
329	Change Converter Identity Completed

Message Number	Message Text
2017	Changes to configuration files require system reboot.
486	Channel # must be greater than previous channel number
332	Channel entered is invalid
261	Channel entries must be in ascending order
1019	Channel is not under DSE control
340	Channel Map list # not found
436	Channel Map List Not Found
259	Channel Min may not be greater than Channel Max
2130	Channel number is required
469	Channel Schedule already exists
1022	Channel Schedule deleted
470	Channel Schedule does not exist
246	Channel Schedule marked for delete
1024	Channel Schedule not found
245	Channel Schedule successfully stored
244	Channel Schedule successfully updated
1023	Channel Schedules being rebuilt
830	Checking for report data
821	Checking for Reports in Progress.
608	Collecting The Responses
1031	Communicating with DSE, please wait...
047	Communicating with the converter(s), Please wait.....
1114	Communication error while reading # of nonsent values
1105	Communication error while reading authorizations
1115	Communication error while reading configuration info

Message Number	Message Text
1113	Communication error while reading credit limit
1116	Communication error while reading purchases
1108	Communication error while reading service code
1107	Communication error while reading signature
1106	Communication error while reading telephone parameters
1112	Communication error while reading terminal control
1111	Communication error while reading timeout value
1122	Communication error while telling converters to dial
106	Configured partition types do not match converter type, dbstat =
1157	Continuous data collection will start at designated time
1147	Continuous telephone data collection Active
426	Control Key Cleared
005	Converter Already Initialized
038	Converter Cleared
424	Converter Deleted
206	Converter ID Already In Use
313	Converter ID is Out Of Range of the Hardware Config
380	Converter ID not in database range
207	Converter ID Not In Use
325	Converter ID not Two-way
311	Converter ID Required
211	Converter Information Cleared
233	Converter Information not deleted
018	Converter Init Failed

Message Number	Message Text
004	Converter Initialization Failed
007	Converter Initialization Successful
016	Converter Initialized
026	Converter must be initialized before it is refreshed
037	Converter NOT Cleared
208	Converter Not Connected
705	Converter Not Initialized
022	Converter not Initialized
017	Converter NOT Responding
003	Converter Not Responding
019	Converter Not Responding
703	Converter not responding
039	Converter Refresh Failed
1120	Converter responded with incorrect serial number
1119	Converter responded with incorrect SUB ID
002	Converter Serial # Mismatch
212	Converter Serial Number Already In Use
209	Converter Serial Number Not In Use
315	Converter Serial Number Required
021	Converter Test Procedure Completed
020	Converter Test Procedure in Progress
394	Converter type has not been defined
364	Converter Type invalid - down-loadable converters only
363	Converter Type invalid with Sub IDs configured for QC
312	Convid not in address range for Converter Type
373	Convid not in address range for Hub Code

Message Number	Message Text
108	Convids configured for quality control are out of range
410	Could Not Sign Off From This Screen
421	CRT Station Signing Off !!
117	Current selected range has no two-way or one-way converters
2016	Cursor positioned on last record. No more data.
247	Database error when getting static map dbstat
619	Data Collection Canceled
457	Data Collection File Cleared
612	DATA COLLECTION IN PROGRESS
605	DATA COLLECTION STARTED
496	Data transfer failed to temporary table
1029	Database delete failed
251	Database insert failed
1008	Database update failed after DSE set
2105	Date must be defined
397	Date must be less than or equal to current date.
2102	Date must be >= current date
2103	Date must be >= end date
2110	Date must be > than starting date
2118	Date must be >= stop date
827	Date out of range
2132	Deadlock has occured, retries exhausted
708	De/Authorization punch failed for converter id#
707	DeAuthorization punch was successful for converter id#
378	Decimal value must be divisible by 125, (0 - 875)
463	Default Converter Record Successfully Updated

Message Number	Message Text
2015	Default diskfile will be created for this report type
2129	Default map already exists for this channel
256	Default map generation in progress, please wait...
2002	Deletion operation will not be performed
2107	Destination information not deleted on cancel. Status #
2106	Destination information not found
2100	Destination information not stored, database error number #
503	Destination Task is not running
2109	Destination type does not exist
825	Disk File Automatically created for this report type
2014	Diskfile already exists
2013	Diskfile does not exist
456	Downloadable converters initialization completed
242	DS/E record has been added
237	DS/E record not found
241	DS/E record update
1001	DSE clear failed
1020	DSE information sent
1018	DSE is one-way, two-way commands cannot be performed
1002	DSE name or number must be input
042	DSE Not Responding
1000	DSE queue cleared
1003	DSE read failed
1012	DSE scrambling mode set
1005	DSE set failed
1004	DSE successfully set

Message Number	Message Text
253	Duplicate channel entries are not allowed for this type of map
210	Duplicate Keys - Re-enter with a Different Key
490	Duplicate logical channels not allowed
235	Duplicate password entered
437	Duplicate Service Number - Re-Enter
2135	Emergency Alert must be YYYYYYYY or NNNNNNNN or a combination of Y and N
382	End Converter acct no. must be greater than start
369	End Converter ID must be greater than start converter ID
381	End Converter serial no. must be greater than start
234	End of file reached
807	Enter both Starting and Ending Date of Collection
614	Enter C or P
336	Enter one of the options from above
439	Enter values for both service numbers
414	Enter your password followed by <RETURN>
431	Entered data is not octal
254	Entry is required
905	ERROR - Class send FROM Wire Link is invalid
903	ERROR - Class sent to Wire Link is invalid
346	Error - Time Out should be 2 to 384 in 2 Hr Increm.
907	ERROR - Wire Link and Screen out of sync.
902	ERROR - Wire Link request not implemented
034	Error -- failed to find any babbling converters
492	Error clearing auto two-way poll file
485	Error Detected on Restore - Status =
011	Error Detecting or Deleting Babbling Converter

Message Number	Message Text
214	Error During Database Access
702	Error during open punch line
602	Error During Poll
1121	Error during setup of converter telephone connection
509	Error in Communicating with Autotest
030	Error occurred during search
491	Error returned from system call:
425	Event Key Cleared
440	Event time overlaps with Service Number
2126	Expiration date must be greater than start date
495	Failed to build temporary table for file transfer
013	Failed to turn *on* converter response lights
014	Failed to turn the converter light *off*
348	Failure on receiving length. Status
500	Failure While Doing Pipe Mapping
104	FATAL - Error assigning form channel
2113	Fatal Error!!! Cannot get valid message number, aborting screen
262	File Cleared
2125	Finding requested information, please wait
1014	First letter must be an A or B
479	First look/display Pay services marked for delete
494	Floppy drive is already in use
044	Fone Impulse Operation Complete
429	Frequency change was NOT properly done - Try again
1151	Front End Computer REBOOTED

Message Number	Message Text
036	Function cannot be performed for this Converter Type
2020	Function cannot be performed from this terminal; use system console
041	Global Punch Failed
1143	Group operation not disabled
1156	Group telephone operation canceled
824	Hit Previous, Selection, or Logon key to exit screen.
2131	IBB maps must have at least 1 NO ACTION method with message number
341	Illegal Channel. Channel Range is from 1 To 256
804	Illegal limits
823	Illegal printer name. Enter a valid printer name
433	Illegal selection - please retry!
1006	Illegal value for video inversion
006	Impulse Operation Cannot Be Done For This Converter
636	Impulse operation in progress, task cannot be shut down
393	Impulse operations not allowed on ranges of Serial OR Account numbers
368	Inconsistent preview time specified
367	Inconsistent purchase time limit
611	Inform customers that responses can be entered
223	Information Already in Use
250	Information already in use, only viewing is allowed
222	Information Deleted
202	Information in use by another user - try again later
217	Information Is unavailable - Try Again Later
046	Information not cleared for converter ID#

Message Number	Message Text
221	Information Not Found
213	Information Not Found For Accnt Number
203	Information Not Found For Converter ID
204	Information Not Found For Serial number selected
224	Information Updated Successfully
349	Initialization cannot be done for this converter type
319	Installation Date Required for this Converter Type
1148	Installation Verification operation Active
1161	Installation verification telephone converters canceled
1158	Installation Verification will start at designated time
322	Insufficient Privilege for Requested Screen
370	Invalid - Converter Id must be active
356	Invalid - enter optional a/b cable and channel (1-256)
1028	Invalid channel
330	Invalid character entered
310	Invalid Check Digit for Converter ID - re-enter
2000	Invalid class entered; Database modification not stored.
314	Invalid Converter Serial#. Press help for more information
453	Invalid Data. Press HELP for more information
318	Invalid Date - Less Than Current Date
812	Invalid date range
375	Invalid date: must be >= start archive and <= today
374	Invalid date: must be within Archive Date range
396	Invalid Day for month of February in specified year

Message Number	Message Text
390	Invalid Day of Month: valid values between 1 and 31
395	Invalid Day of specified month: valid values between 1 and 30
392	Invalid Device: User S for SCREEN, P for PRINTER, D for DISKFILE
1015	Invalid DSE Id. Valid ID is between 260096 and 262143
385	Invalid emulation mode: valid values 0-
302	Invalid Entry
2112	Invalid entry, valid entries are ON, OFF, or BLINK
2111	Invalid entry, valid entries are YES or NO
309	Invalid Entry - Valid Entries Are Y or N
255	Invalid entry format
387	Invalid entry: valid values are A or B
317	Invalid Month, Day or Year - Date Format is MM/DD/YY
389	Invalid Month: valid values between 1 and 12
360	Invalid morality code
415	Invalid name or password entered - lease try again
327	Invalid Option Number For GO TO SCREEN Request
1027	Invalid option requested
633	Invalid option sent from 4GL, operation not performed
2021	Invalid package type - enter P, V or C.
621	Invalid poll class returned
388	Invalid Price: valid values $0.00 through $99.99
384	Invalid Program Mode entered: valid values 1-8
1021	Invalid queue entry for DSE (probably non-existent)

Message Number	Message Text
316	Invalid Range
347	Invalid Range
335	Invalid Range in Octal
308	Invalid Request - Returning To LOGON Menu
321	Invalid Request Number for this Menu
386	Invalid scrambling mode: valid values 1-9 (or zoom)
333	Invalid Service Code
342	Invalid service code for configuration; ZOOM for valid values
353	Invalid Service Code Range - Range 2 to 256
2022	Invalid service type - enter S or E.
334	Invalid site code
323	Invalid Terminator - Refer To The Instruction Manual
391	Invalid Time Format: use HH:MM
328	Invalid tuning type (valid values are H, S, and for type 5 and 6, I)
379	Invalid username/password; Re-enter field values
383	Invalid Video Inversion entered; Enter A, B, C, D, E, F, -
399	Invalid/Null Conv. type has been detected for Sub ID#
1153	Isolate Malfunctioning Converter search Complete
1163	Isolate Malfunctioning telephone converters canceled
1162	Isolate Non-participating telephone converters canceled
1150	Link between Front End Computer -- Main Computer down
464	Logon screen failure
257	Map add is being canceled, please wait...

Message Number	Message Text
2119	Map has already been generated, please cancel to change map number
2128	Map has not cleared completely, Map has not been deleted
100	Map To Configuration Region Failure
119	Mapping has not completed. Configuration common empty
372	Master/Slave Code must be between 1 and 2097151
2114	Message has not cleared completely, please try later
2116	Message has not completed a previous update, Please try later
2121	Message number and type required
2104	Message number does not exist
2122	Message number required
2117	Message type invalid for copy
2123	Message type required
2101	MM update information not stored, database error number #
467	More than 32 services have been selected - only 32 used
1164	Must cancel group operation from initiated screen
326	Need Entry To Key Off Of Before Next Group Option
447	New Map List To Be Defined is Table
227	New service number item number must be 1, S/W error
900	No Action Taken - Wire Link already started
901	No Action Taken - Wire Link already stopped
908	No Action Taken - Wire Link not configured in system
1132	No active telephone operations to cancel

Message Number	Message Text
481	No additions, changes or deletions have been made
483	No Archived Purchase Files Found
1207	No Automatic Two-Way Converter Poll Info for Today
1211	No Automatic Two-Way Converter Polling Scheduled
508	No Autotest Steps given by the Operator
462	No Change in Identity Detected
263	No changes have been made, nothing to Update OR Cancel
1016	No Changes were made. No need for the update.
497	No channel schedule has been selected, please select.
427	No current purchases in file to transfer
1032	No data found for channel schedule for specified date range
355	No Events configured
2137	No item specified, Please position cursor on item to delete
828	No key entered
111	No key information supplied. Please enter key info.
116	No map type has been chosen, press a map key/button
243	No more Converter IDs are available
236	No more data for this function
260	No more maps can be created
2138	No more QC conv IDs available. Please delete list to add more
228	No more service numbers available
1139	No more telephone: (Group/Single) operations can begin

Message Number	Message Text
1128	No new purchases OR couldn't make telephone connection
477	No Pay Services Marked for Delete
622	No polls running so no polls canceled
498	No purchase records found
635	No purchases/authorizations found for this converter
115	No range has been defined
801	No range requested. Report will not be generated!
2003	No records found for input classname
225	No Records With Requested Input
817	No Reports in Progress. Hit Previous to exit screen.
419	No Response From Scheduler
118	No services found in Pay service common
354	No Subscriptions configured
1171	No Telephone group operation currently in progress
1208	NO two-way converters/CANNOT enable auto polling
624	Non Responding Converter poll canceled
412	Not Currently Assigned
413	Not Currently Implemented
432	Numeric required
337	Only Pay services accessible until services updated
478	Operator has Canceled Pay Service Deletions
452	Operator not privileged to access password
2004	Operators are defined for this classname; Delete not permitted;
620	Opinion poll canceled
458	Opinion poll file in use - can't be cleared at this time

Message Number	Message Text
615	Opinion Poll Initiated
637	Opinion poll not started: file in use or another rf in progress
344	Output channel selected can be H for high or L for low
2010	Package just added/updated may have inconsistent components
488	Package will have no components, delete entire package
240	Password is required
472	Pay Service already marked for delete
444	Pay Service does not exist
461	Pay service history file in use - can't be cleared at this time
438	Pay Service Number exists, try again
231	Pay Service successfully deleted
230	Pay Service successfully stored
229	Pay Service successfully updated
357	PC LOCK and LAST/FAV CHANNEL are mutually exclusive
909	Performing requested operation, please wait...
1030	Performing requested operation, please wait...
2115	Please clear message before deleting
811	Please define date range
810	Please define day count
2005	Please enter a valid operator name and password.
466	Please enter your user name
113	Please press an action function/button to proceed
2133	Please remove message from PPV screen before deleting
606	POLL CANCELED

Message Number	Message Text
604	Poll Failed
607	POLL IN PROGRESS
2019	Positive value required
2108	PPV destination information must be entered from PPV screen
2124	PPV destinations are only available for PPV confirmations
616	PREPARING FOR COLLECTION OF ALL PURCHASES
417	Press execute to perform operation
609	Press the paging buttons to scroll, or Cancel to exit
1125	Problem with request to Activate/DeActivate Data Coll
505	Problem with the pipes
704	Punch Operation Was Successful
482	Purchase Data Not Saved, Purge Data Cannot Be Executed
1159	Purchase telephone data collection canceled
048	Purchases cleared from converter successfully
377	Quality Control range not within Database range
043	Range Operation Canceled
800	Range selected not valid for this report option
601	Received Bad Data From POLTSK
1160	Recover previously collected purchases canceled
025	Refresh of Converter Information Successful, Converter ID #
813	Report does not exist
806	Report Generation in Progress
819	Report has been canceled.
818	Report has been successfully paused.

Message Number	Message Text
809	Report is not Implemented
815	Report is not paused
826	Report Output Being Directed to Screen...PLEASE WAIT
418	Report Task Scheduled
829	Request id for report can be determined from Report Control
012	Reset Demodulator and Configuration Frequency -- Restart
514	Restore did not occur : no tape was in drive
484	Restore Has Been Initiated
499	Restore/Archive in Progress
045	RF Impulse Operation Complete
361	Schedule time is not consistent with Pay service time
1126	Scheduled Data Collection ACTIVATED
1127	Scheduled Data Collection DEACTIVATED
441	Screen Does Not Exist
031	Search successful, total # babbling converters
324	Selected Pay Service # No Longer Available
1009	Send failed when setting DSE
112	Serial# OR Account# key fields must be defined
352	Service Code not available
358	Service code not found
629	Service Code Poll canceled
2134	Service deleted is last in package. Manually delete from package!!
460	Service entered is a package
459	Service entered is not a package
443	Service Number deleted

Message Number	Message Text
489	Service number is not a channel or vip package
362	Service Number is not a package
474	Service Number is not Active
475	Service Number is not Purchasable
226	Service number is out of range (Enter 1 - 8191)
623	Service poll canceled
435	Set all required parameters before executing function
1025	Set not allowed while DSE is in automatic control
701	Setting The Initialized Value To "N" Not Successful
808	Severe Error - Report will NOT be Generated
625	Single Converter poll canceled
2023	Sorry, user cannot exit from this form
2024	Spawning stand-alone program, please wait until completed....
501	Specified Pipe Full
502	Specified Pipe Not Open
832	Spooler Disabled
831	Spooler Enabled
834	Spooler Not Disabled
833	Spooler Not Enabled
033	Starting Initialization of Babbling Converter Algorithm
376	Sub ID in hardware range (256000 - 262144) not allowed
422	System Being Taken Down - CRT Station Signing Off
105	System is not a Wire Link System.
110	System is not configured for account number use as key

Message Number	Message Text
107	System not configured for this Wire Link; please enter a new value
448	System unavailable at this time
493	Tape drive is already in use
2136	Task is not running, cannot access this function at this time
1137	Telephone activity shutdown
1136	Telephone activity started
1135	Test converter operation canceled
803	The "TO" date must Not be smaller
430	The change in the frequency was successfully made
906	The Current Options for this Screen
639	The currently selected range includes one-way converters
258	The map has been updated successfully
820	The report has been restarted.
816	The report is already paused
626	The request to Cancel DID NOT work.
359	The service is not active during this time period
2120	There are no active messages defined
252	There are no maps applicable to Converter Type selected
109	There are no Telephone converters in configuration
101	There are no two-way converters in configuration
473	This entry overlaps with an existing scheduled entry
2018	This field requires valid data
239	This function is not allowed for this Configuration
2127	This map is not active; therefore, it cannot be cleared

Message Number	Message Text
434	This operator number cannot be deleted
343	This service code does not match this sensitivity
2025	Time zone name change will not take effect until system is rebooted
1123	Unable to access data collection file
1124	Unable to access Telephone configuration file
454	Unable to change Converter Identity
1104	Unable to complete printing of report on console
1100	Unable to interpret request
023	Unable to perform test procedure
455	Update Converter Info - this may take awhile -
2008	Update not performed, CHANGE operation not in progress
450	Updating default converter information
449	Updating Pay Services
700	Updating The Converter Not Successful
802	Upper and lower limits must be specified.
416	Upper limit must be greater than the lower limit
2007	Use ACCEPT to return value; use CANCEL to exit without returning value
2006	User cannot move to next form until valid data has been entered.
345	Value for hours must be from 0 to 23
331	Value for minutes must be from 0 to 59
350	Value for seconds must be between 0 and 59
351	Value for tics must be between 0 and 59
465	Value is within valid range but not currently used
610	Verify Failed
613	VERIFY IN PROGRESS

Message Number	Message Text
476	Viewership monitoring file in use; Can't be cleared at this time
638	Viewership poll not started: file in use or another rf in progress
1017	Warning, Line Inversion fails to Verify
102	Warning (This does not include all two-way converters)
320	Warning - Time Out should be 2 to 384 in 2 Hr Increment
471	Warning : Channel mismatch of Pay service and schedule
366	WARNING: # of channels over configuration value of
398	WARNING: Date entered is less than current date
904	Wire link Request was successful
423	WORKING
2012	You cannot exit application from this form
487	Zeroing out remaining records

Wire Link Messages

This section shows sample wire link message displays on the wire link cathode ray tube (CRT) and system console, then discusses the most common wire link messages.

Sample Message as Displayed on Wire Link CRT

When a wire link error occurs, a message appears with any available supporting information on the wire link CRT. For example:

01-05-94 09:27:47 E 051 - Converter ID Already Assigned - CONVID = 28373/3

where:

01-05-94	is the date, in MM-DD-YY format.
09:27:47	is the time, in HH:MM:SS format.
E	is the type, where I = Information, E = Error, and F = Fatal.
051	is the error number.
Converter ID	is the error description.
CONVID	is the key name.
28373/3	is the key value.

Sample Message as Displayed on System Console

When a wire link error occurs, a brief message also appears on the system console. For example:

01-05-94 09:27:47 F 351 - WL ERR - +00096/260, 28373/3, T8A75071817F, 123456789, RT = NO, ERR = 051

where:	01 05-94	is the date, in MM-DD-YY format.
	09:27:47	is the time, in HH:MM:SS format.
	F	is the type, where I = Information, E = Error, and F = Fatal.
	351	is the line identifier.
	WL ERR	is the error identifier.
	+00096	is the sequence number for transactions from the host.
	260	is the command type (for example, 260 is an add and 262 is a change).
	28373/3	is the Converter ID, with the check digit.
	T8A75071817F	is the Serial Number.
	123456789	is the Account Number.
	RT = NO	is Yes or No, as to whether the host should retry the transaction.
	ERR = 051	are the error numbers (this example only has one).

Description of Common Wire Link Messages

For most of the following error messages, you should verify that the data on the billing system and the ACC-4000 Controller is correct. Your method for resolving a problem usually depends on its point of origin. Keep any message printouts to facilitate problem solving.

050 – Invalid Converter Type (snnnnn)

This error occurs when the billing system sends a Converter Type outside of the current range of converter type numbers. The value sent appears in the format SNNNNN (for example, -00014 represents minus 14). Contact your billing system for resolution of this error.

051 – Converter ID Already Assigned - CONVID = nnnnnnn/n

This error occurs when the billing system tries to add a Converter ID that is already assigned on the controller. This means that both the billing system and controller have a Serial Number and Converter Type assigned to the same Converter ID.

a) If the Serial Numbers and Converter Types are the same, try to send the hit from the billing system again. If it is still rejected, let the billing system do the add. Remove the converter from the cable plant, delete the converter from the controller, re-add it using the billing system, then connect it to the cable plant.

b) If the Serial Numbers are the same and Converter Types are different, determine the correct Converter Type. If the billing system is wrong, have the value on the billing system changed. If the controller is wrong, delete, re-add, and initialize the converter on the controller.

c) If the Serial Numbers are different and Converter Types are the same, determine if there are two separate converters or there is a transposition in the Serial Numbers. Try to physically locate the converters. If there is only one converter, correct the Serial Number in error, on either the billing system or the controller. If there are two converters involved, determine the Converter IDs assigned on both the billing system and the controller.

052 – Account Number Mis-Match – CONVID nnnnmnn/n

This error occurs when the account keys on the controller and billing system do not match. If this happens, call our Technical Response Center at 1-800-537-7653 to have them change line number [088] in the config.dat file from a T to an F.

053 – Error In Punch To Converter (snnnnn) (snnnnn) (snnnnn)

In a two-way plant, this error sometimes occurs when you are having plant problems or a two-way converter is not responding. It can also occur when a one-way or FONE-way converter is defined as a two-way converter.

First, try to communicate with the two-way converter using the controller, as there are many commands available to test with. If the error persists, make sure that the converter is hooked up to the cable plant, that there is no problem with the plant, that the drop is OK, and that other physical conditions are met.

If you do not have a two-way plant, this error can be due to a loose or bad SCX-11, SCX-llE, or SXC-llM card. Call our Technical Response Center at 1-800-537-7653 for assistance.

055 – Serial No. Already Assigned - Serial = xxxxxxxxxxx

This error occurs when the billing system tries to add a converter without supplying the Converter ID. From the Change Screen, call up the converter by entering the Serial Number. Note the Converter ID, then see status message 051 to resolve this problem.

056 – No Serial Number Supplied

This error occurs when the billing system tries to add a downloadable converter without supplying the Serial Number. Check the Converter Type - if it is downloadable (type 4 or higher), enter the Serial Number on the billing system side. If it is PROM-based (types 1 through 3), correct the Converter Type on the billing system side.

057 – Invalid Serial Number - SERIAL = xxxxxxxxxxx

This error occurs when the wire link receives a transaction having an invalid Serial Number format from the billing system for a downloadable converter, type 4 or higher. The Serial Number format for a downloadable converter is:

POSITION	DESCRIPTION
1	Country code: C = Canada, J = Japan, T = Taiwan.
2	Year, for example, 5 = 1985, and 6 = 1986.
3	Month: A = Jan, B = Feb, C = Mar, D = Apr, E = May, F = Jun, G = Jul, H = Aug, J = Sep, K = Oct, L = Nov, M = Dec.
4-10	The seven-digit sequence number.
11-12	Blank, or a two-integer tab number with no blanks.

058 – Converter Initialization Failed - nnnnnnn/n ERR = snnn

This error occurs when the wire link receives an initialization command from the billing system for a two-way converter and you are having plant problems or the two-way converter is not responding. This error also occurs when a one-way or FONE-way converter is defined as a two-way.

First, try to communicate with the two-way converter using the controller, as there are many commands available to test with. If the error persists, make sure that the converter is hooked up to the cable plant, that there is no problem with the plant, that the drop is OK, and that other physical conditions are met.

A non-responding RF converter generates this message during the 264 command.

059 – Account No. Already Assigned - ACCOUNT - = xxxxxxxxxxx

If this error occurs, call our Technical Response Center at 1-800-537-7653 to have them change line number [088] in the config.dat file from a T to an F.

060 – Telephone No. Not All Numeric - TELEPHONE = xxxxxxxxxxxx

This error occurs on detecting invalid characters in a Telephone Number. Valid characters are 0 (zero) through 9 and blank. Examples of valid entries are: 2156744800, 6754888, 1 2 3 4 5, and " ". No edit checks outside of numeric and blanks take place.

The Telephone Number field consists of the following:

POSITION	DESCRIPTION
1 - 3	Area Code
4 - 6	Exchange
7- 10	Number

The ACC-4000 Controller does not store the Telephone Number.

069 – Service Not Available (nnnnnnn/n) (snnnnn)

This error occurs when an upgrade or downgrade gets sent by the billing system for a service that is not defined on your controller. This message is only printed when you select the Display Miscellaneous Errors via the Wire Link Change Logging Options screen. The Converter ID is printed with the service to be upgraded or downgraded.

070 – Converter ID Not Found - CONVID = nnnnnnn/n

This error occurs when the wire link receives a change, insert, or delete transaction from the billing system for a Converter ID that is not defined on the controller.

In many cases, the billing system automatically re-sends the transaction as an add and initialize. In this manner, the problem may be self correcting. If the billing system does not automatically re-send the transaction to add the converter, you must take action to resolve the error. The easiest way to do this is to add the converter to the controller.

071 – Serial Number Not Found - SERIAL = xxxxxxxxxxx

This error occurs when the wire link receives a change transaction from the billing system for a Serial Number that is not defined on the controller. This can be the case for those billing systems that do not store or send the Converter ID, but just store or send the Serial Number.

In many cases, the billing system automatically re-sends the transaction as an add and initialize. In this manner, the problem may be self correcting. If the billing system does not automatically re-send the transaction to add the converter, you must take action to resolve the error. The easiest way to do this is to add the converter to the controller.

072 – Two-Way Converter Not Responding – CONVID = nnnnnnn/n

This error occurs when the wire link receives a non-initialize command (change or clear keys, for example) from the billing system for a two-way converter and you are having plant problems, or the two-way converter is not responding. This error also occurs when a one-way or FONE-way converter is defined as a two-way converter.

First, try to communicate with the two-way converter using the controller, as there are many commands available to test with. If the error persists, make sure that the converter is hooked up to the cable plant, that there is no problem with the plant, that the drop is OK, and that other physical conditions are met.

074 – Converter Type Mis-Match (CONVID = nnnnnnn/n, BS = nn, DB = nn)

This error occurs when the wire link receives a transaction from the billing system where both the Converter ID and Serial Number match, but the converter type does not. Depending on the setting of the converter mis-match flag in the wire link configuration file (parameter [099]), this error may print when the transaction is not rejected. This mis-match flag is sometimes set on converting from an AH-1/2/2E to an ACC-4000 Controller or converting from one billing system to another. Correct the Converter Type as soon as possible, as it is required if the converter has to be re-initialized.

See error 051 for more information on this error.

078 – Serial Number Mis-Match – CONVID = nnnnnnn/n

This error occurs when the wire link receives a transaction from the billing system where the Converter ID matches but the Serial Number does not. Depending on the setting of the Serial Number mis-match flag in the wire link configuration file (parameter [100]), this error may print when the transaction is not rejected. This mis-match flag is sometimes set when converting from an AH-1/2/2E to an ACC-4000 Controller or converting from one billing system to another. Correct the Serial Number as soon as possible, as it is required if the converter has to be re-initialized.

See error 051 for more information on this error.

094 – Duplicate Service # In Update (nnnnnnn/n) (snnnnn)

This error occurs when the wire link receives a change command from the billing system containing more that one entry for the same Service Number. This can happen when there is a problem with the billing system rate codes, which you should have checked out. The error only appears when the Display Miscellaneous Error is set, and both entries are upgrades or both entries are downgrades. When the entries are different, a 121 error occurs.

095 – Serv # To Down Grade Not Selected (nnnnnnn/n) (snnnn)

This error occurs when the wire link receives a change command from the billing system with an entry to downgrade a service that is not selected. This does not necessarily indicate a problem with the billing system, but you should check into it. The error only appears when the Display Miscellaneous Error is set.

096 – Serv # To Up Grade Not Selected (nnnnnnn/n) (snnnn)

This error prints when the wire link receives a change command from the billing system with an entry to upgrade a service that is already selected. This does not necessarily indicate a problem with the billing system, but you should check into it. The error only appears when the Display Miscellaneous Error is set.

105 – Other Database Error (snnnnn)

This error occurs when there is an error in the controller's database. If a diagnostic appears that is not defined by an error message, take note of the message and call our Technical Response Center at 1-800-537-7653 for assistance.

107 – PPV Group Update Entry Successful (nnnnnn/n) (snnnnn)

This status message indicates that the PPV authorizations were successful.

110 – DB Record In Use – Try Later – CONVID = nnnnnnn/n

This error occurs when the wire link receives a transaction from the billing system for a record that is currently locked by another user. Determine if one of your operators has the record locked. If so, have the operator exit from the record, then retry the transaction.

141 – Req Proc nnnnnnn/n, xxxxxxxxxxxx, xxxxx/*N*XXA_A$$_$$

The wire link monitor displays the update status and the type of punch operation performed during the processing of the request.

- If no database update was performed (there is no change to subscriber information), an N appears between the asterisks; if an update was performed, a blank space appears instead.
- XX is a punch code inserted at the end of the 141 – Request Processed display. For example, PI means a partial initialize was processed. The possible codes are:

NP	No punch.
CB	Change brief (includes only active, tcb and services).
CF	Change full (the above as well as channel map)
D	Delete.
A	Add (for PROM-based converters only) initialize.
I	Initialize
PI	Partial initialize (refresh).
CI	Clear IPPV purchases from converter.
CP	Clear parental control key.
CE	Clear event key.
CK	Clear both keys.

- A_A is "from" to "to" active status. That is, "N_Y" means going from active = N to active = Y.
- SS_SS is "from" to "to" converter status. That is, "C _D " means going from "C " to "D " status. Note that a blank follows both the C and the D.

12 • Trouble Shooting Guidelines

Installation

This chapter provides you with assistance in identifying and resolving problems with:

- Authorizing all converter types
- Refurbishing converters
- Interpreting the error and diagnostic codes displayed on STARCOM VI and IMPULSE 7000 converters
- Reconciling discrepancies between the ACC-4000 and your billing system

The alphanumeric characters you see displayed by the converter are identified in this chapter by bold text.

Although the material presented in this chapter will be useful to you should a problem arise, it is not comprehensive. Should you experience problems with a converter, refer to the appropriate installation manual for additional information.

Unable to Authorize a Converter

If you cannot successfully authorize a converter, the problem may lie in any of the following equipment or areas:

- Converter problem
- Addressable controller
- Billing system
- Data path
- Drop to a particular house

Using the ACC-4000, check the wire link monitor to evaluate the communications between the customer billing computer and the ACC-4000. Follow these steps to assess the problem:

1. If you determine that a host message wasn't received, a communications problem exists. Verify your network connections.

2. If you determine that a host message was received , but the transaction has already scrolled off the wire link display, then check the ACC-4000 printer or console which is listing all logger messages. If a related error message appears, this will indicate the type of error, such as serial number mismatch (where there's a discrepancy between information on the ACC-4000 system and that on the billing system), or maybe that the record is locked (still displayed on one of the converter operation screens on the ACC-4000).

3. If you have verified that the billing system is sending correct information which is being processed with no errors, check the converter in your office that is normally left in the diagnostic mode to see if valid data is on your system. If it is, have the subscriber perform the same test.

4. If the data path is found to be functioning and the problem is confined to a single location, then the problem is probably caused by a defective converter.

5. If it is determined that no converters are responding, you must now check the system's data path and related equipment.

Testing and Repairing Converters

New Converters

Because new converters have a very low failure rate, systematic testing of each converter upon receipt is unnecessary; however, you may wish to sample a few on a random basis. Other than those selected for sampling, we do not recommend that you unpack new converters. Converters are primarily identified by their serial numbers, and these are indicated on the exterior of each carton. New converters should be kept in the original shipping cartons until retrieved by the technician for individual installation in the subscriber's residence.

Testing and Refurbishing Returned Converters

Used converters, however, should be cleaned and checked after they are returned from the field. Follow this procedure to check and refurbish a converter:

1. Fully authorize the converter through the billing system or ACC-4000, and perform a functional check of the returned converter. Check for any uncollected purchases and retrieve them. Particular attention should be paid to any mention of repeated problems indicated by the technician on a tag attached to the converter, or a history label, if one exists.

2. When testing is completed, pack all converters requiring repair and ship them to a repair facility. Don't accumulate out-of-service converters for a bulk shipment, since this accumulation of drones doesn't contribute to the system's revenue base.

3. Converters which test as satisfactory should be cosmetically refurbished and packaged for reissue. Original packaging material is recommended, although the use of shrink wrap packaging is also acceptable. These materials not only prevent damage to the converter's exterior, but enhance the overall professional appearance of the entire package when carried into the subscriber's home.

4. Make certain the customer handbook is included with each refurbished converter.

STARFONE and STARVUE Converters

STARFONE and STARVUE converters returned from the field need special attention. Purchases made by the previous customer should be retrieved from the converter for billing purposes and all previous purchases and PIN numbers must be cleared before the converter can be reissued.

- Check if Indicator 2 on the converter LED display is flashing in the IPPV Status Diagnostic display (F,5) which indicates the presence of uncollected purchases in the converter.

- If necessary, collect the purchase information, then clear the PIN and purchase information by re-initializing the converter.

Data collection, when necessary, should be completed before the converter is disassociated from the customer account number. Ideally the converter should be tested that same day, but no later than 24 hours after the converter is returned. The more time that passes before STARFONE or STARVUE testing is performed, the more difficult it becomes to bill and collect whatever purchases are found.

STARCOM VI Converters

Diagnostic Mode

The STARCOM VI converter has a set of built-in diagnostic tests which allow the technician to verify that the converter is operating properly after the installation and initialization are completed. The diagnostic mode lets the technician monitor the:

- State of the descrambler
- FM receiver
- FM data stream

Use the following routine to run the diagnostics:

1. Select **cable *A*** on the converter. All diagnostic tests must be performed with this setting selected.

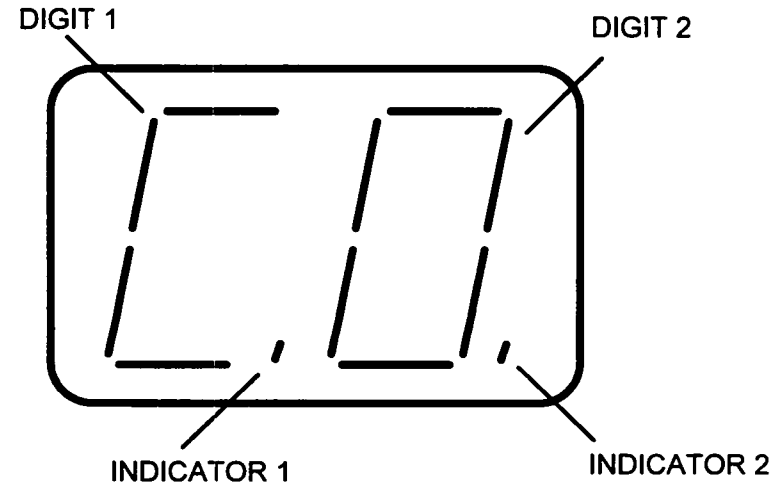
2. Start test with the cable feed unplugged.

3. Tune the converter to an unscrambled channel, then hold down the * (or *PC*) + ●/○ (On/Off) keys on the set-top keypad. The serial number is displayed sequentially (one digit at a time), followed by the diagnostic display.

4. Verify that **CE** is shown on the display.

5. Attach the cable input to the converter.

6. Verify that the **CO** is shown on the display.



The diagnostic display is interpreted as follows:

Indicator 1 **ON** when automatic frequency control (AFC) is locked

Indicator 2 **ON** when the converter is being addressed

Digit 1 State of the descrambler
C = tuned to a clear channel
S = tuned to a scrambled channel

Digit 2 State of the FM receiver
O = FM data stream reception OK
E = FM data stream error

STARCOM VI Self Diagnostic Error Codes

An active STARCOM VI connected to the system will automatically display an error code, if an error exists. The possible codes are shown in the chart below:

Error Code	Cause	Action Required
E1	If *Timer Mode = ON*, this error indicates the converter has not received a reset time-out command. If *Timer Mode = OFF*, this error indicates the converter has not received a good FM packet.	Send the reset time-out or initialize command. The converter will resort to the state which existed prior to the time-out.
E2	Loss of 60 Hz clock.	Return unit for repair.
E3	Powered tamper.	Schedule service call to collect converter. Reinitialize to clear error after return.
E4	Illegal terminal. Converter failed the legal terminal test.	Initialize converter or redefine converter as a legal terminal.
E6	Write/read RAM failure.	Return unit for repair.
E7	Converter had faulty or wrong (defeat attempt) ROM installed, or incorrect initialization procedure was used.	Check initialization procedure, if error remains after initialization and power cycle. If procedure is correct, replace ROM or return unit for repair.
E8	The converter has been installed in a system for which it has not been initialized (wrong site code).	Enter the valid site code; the condition corrects itself and the converter reverts to its previous state. If the error persists initialize converter.
E9	Virgin converter. This error occurs only on initial power-up of a new converter, or if battery fails to keep the RAM alive during a power-down. This error causes the converter to be disconnected and its barker to be set at 106.5 MHz.	Initialize the converter to clear the error. If error persists, return unit for repair.

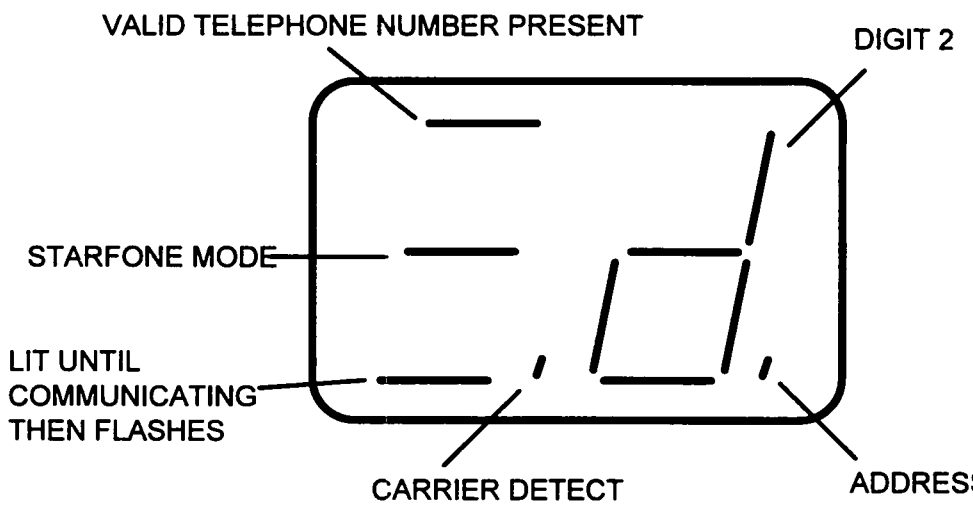
STARCOM VI STARFONE Diagnostics

In addition to RF diagnostics, STARCOM VI converters equipped with STARFONE sidecars include telephone diagnostics. To enter the diagnostics mode:

- Press the * (or PC) + ●/❍ (On/Off) keys on the set-top keypad.

The Diagnostic Mode is now entered, a serial number is displayed momentarily, followed by the status of the RF feed. The display then switches automatically to the phone diagnostics mode when the command to dial is received.

The phone diagnostics display is interpreted as follows:



Digit 2

d = STARFONE is dialing
E = communication error
0 = communication OK
h = STARFONE is back on hook

STARCOM VI Converters Entry Error Codes

When a subscriber enters an unauthorized or disallowed command to the converter, a **P** code error automatically appears on the converter display. Any keystroke clears the **P** Code. These error codes and their meaning are shown below:

P Code	Cause	Action Required
P1	*Problem:* Wrong User access code. *Symptom:* Purchase (unlock) not allowed.	*Subscriber:* Try access code again. *Operator:* No action is required.
P2	*Problem:* Penalty time running after three unsuccessful code entry attempts. *Symptom:* Purchase (unlock) not allowed.	*Subscriber*: Wait 15 minutes, then try again. *Operator*: If problem persists, clear access code(s) for subscriber.
P4	*Problem:* Credit limit exceeded. *Symptom:* Purchase not allowed.	*Subscriber*: Call Operator to refresh credit. *Operator:* Refresh credit if desired.
P5	*Problem:* Transaction Table full. *Symptom:* Purchase not allowed	*Subscriber:* Call Operator to clear slots. *Operator:* Poll box and clear table, if desired.
P7	*Problem:* Credit limit equals zero. *Symptom:* Purchase not allowed.	*Subscriber:* Call Operator to request credit. *Operator:* Verify account status, and extend new credit.
P8	*Problem:* Valid time stamp not yet received. *Symptom:* Purchase not allowed.	*Subscriber*: Wait a few minutes and try again. *Operator* No action required unless problem persists.
P9	*Problem:* Event not purchasable. *Symptom:* Event purchase cannot be completed.	*Subscriber:* Retune channel and try again. *Operator*: No action required.

IMPULSE 7000 Diagnostics

An IMPULSE 7000 converter can assume six different diagnostic modes. These modes are entered from either the converter or from the remote control unit by pressing two keys in sequence. The diagnostic modes and the keystrokes used to enter each are shown below:

Mode	Press Keys sequentially
Error Code Display	F, 0
Dynamic Diagnostics (one-way)	F, 1
Serial Number/ Firmware Version	F, 2
Firmware Version	F, 3
IPPV State	F, 4
IPPV Status	F, 5

IMPULSE 7000 Self Diagnostic Error Codes (F, 0)

The converter stores an error indication if any one of several operational problems develop. The error codes with their cause and the remedial actions required are as shown below. The highest priority error code will be displayed first.

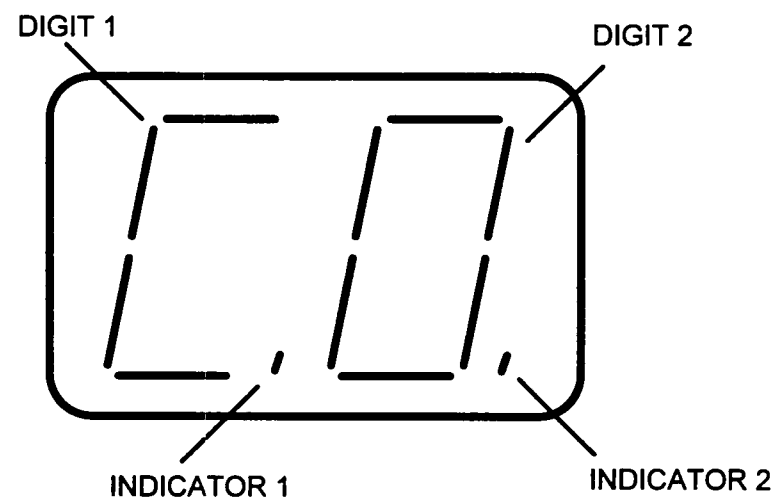
Error Code	Cause	Action Required
E0	Indicates normal conditions after initialization.	No action is required.
E1	If *Timer Mode = ON*, this error indicates the converter has not received a reset time-out command.	Send the reset time-out or initialize command to determine if the converter responds or not. If it responds, the converter reverts to the state which existed prior to the time-out. If it doesn't respond, determine whether the time-out occurred because of uncollected purchase data (enter the diagnostic code F, 5).
	If *Timer Mode = OFF*, this error indicates the converter has not received a good FM packet.	
E2	Not used.	
E3	Not used.	
E4	Illegal terminal. Converter failed the legal terminal test.	Initialize converter or redefine converter as a legal terminal.
E5	Default address. Converter contains the default address (due to clear address command).	Set a new address by initializing the converter.
E6	Not used.	
E7	Converter had faulty or wrong (defeat attempt) ROM installed, or incorrect initialization procedure was used.	Check initialization procedure, if error remains after initialization and power cycle. If procedure is correct, replace ROM or return unit for repair.
E9	Virgin converter. This error occurs only on initial power-up of a new converter, or if battery fails to keep the RAM alive during a power-down. This error causes the converter to be disconnected and its barker to be set at 106.5 MHz.	Initialize the converter to clear the error. If error persists, return unit for repair.
EA	Invalid serial number (wrong check sum).	Reprogram serial number, then initialize converter.

IMPULSE 7000 Dynamic Diagnostic Mode (F, 1)

Before issuing a converter, place all initialized converters in the dynamic diagnostic mode (F,1) to make certain none of the displays show a converter in a disconnected state. This diagnostic mode lets the technician monitor:

- State of the descrambler
- FM receiver
- FM data stream

The meaning of each display indicator, in this mode, is shown below:



Indicator 1	**ON** when a purchasable event is available
Indicator 2	**ON** when converter is being addressed
Digit 1	State of the descrambler **C** = tuned to a clear channel **S** = tuned to a scrambled channel **b** = tuned to a barker channel **-** = disconnected
Digit 2	State of the FM receiver **O** = FM data stream reception OK **E** = FM data stream error

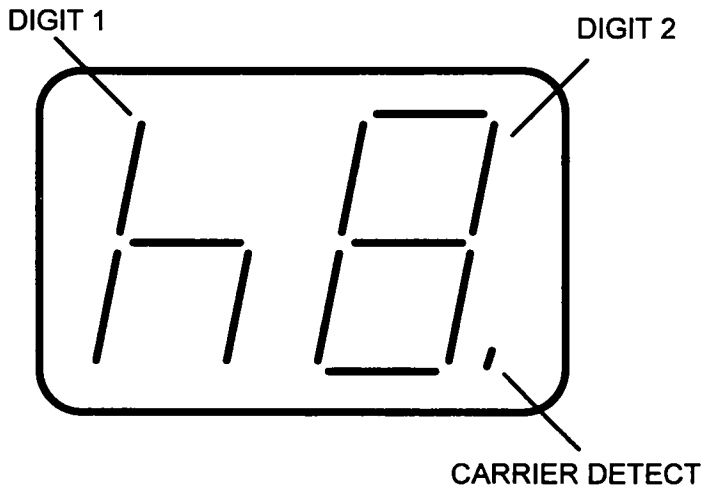
STARFONE State Diagnostic Codes (F, 4)

This mode provides the means to monitor and confirm the state of the data communications during a two-way transaction. To use this diagnostic procedure:

1. Phone the ACC-4000 operator, identify your location, and request that the converter be downloaded and a poll initiated. Then hang up.

2. Press the F,4 keys and look at the codes shown on the display. The converter now automatically displays a series of codes.

The meaning of each of these codes is shown below.



On Hook Codes

Digit 1	Digit 2		
h	*	=	ON HOOK (* see Hang-up code list below)
	-	=	test for line available
d	-	=	dialing
A	-	=	waiting for answer
c	**r**	=	communicating, receiving
c		=	communicating, transmitting
c	-	=	communicating, idle
r	*	=	waiting for retry (* see Hang-up code list below)

Hang-up Codes

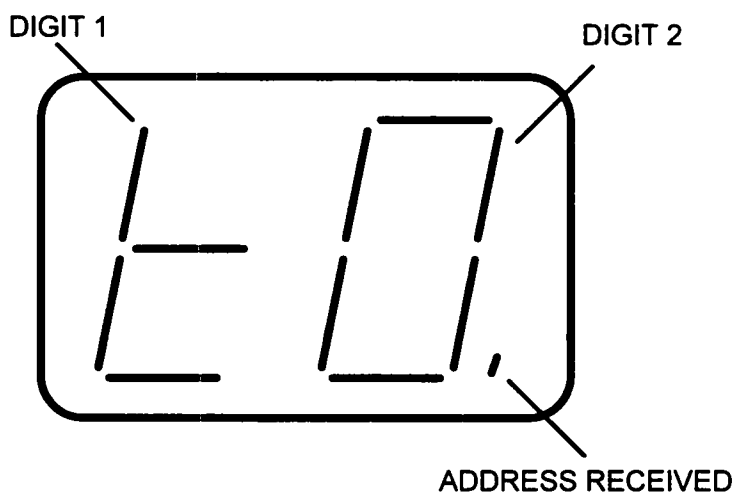
Digit 2		
-	=	normal hang-up
A	=	answer time out
r	=	phone ringing
c	=	carrier loss
L	=	phone line in use
E	=	errors (data)
U	=	user line request
P	=	parameters invalid
	=	data time-out
c	=	communication protocol fault

STARVUE State Diagnostic Codes (F, 4)

This mode provides the means to monitor and confirm the state of the data communications during a two-way transaction. To use this diagnostic procedure:

1. Phone the ACC-4000 operator, identify the location, and request that the converter be downloaded and a poll initiated.

2. The technician presses the F,4 keys and looks at the codes shown on the display. The meaning of each of these codes is shown below.



Digit 1
t = transmitting data
r = receiving data
- = idle

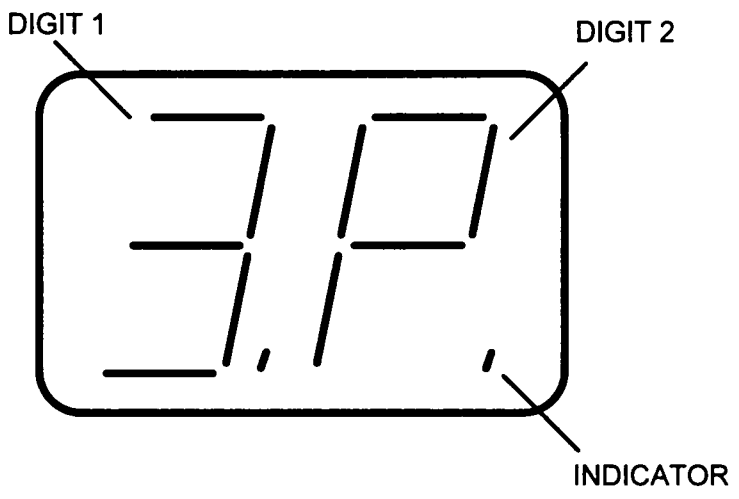
Digit 2
O = data OK
E = data error

Indicator
IPPV Indicator
On = IPPV (credit) enabled
Flashing = PPV transactions not collected
Off = IPPV (credit) disabled

IPPV Status Diagnostic Codes (F, 5)

This shows the technician the status of the data parameters that affect two-way transactions in either a STARFONE or STARVUE converter. At the subscriber location, checks the F, 5 diagnostic code to make certain that purchases are enabled and that no uncollected purchases exist.

The codes displayed for a STARFONE converter and their meaning are shown below.



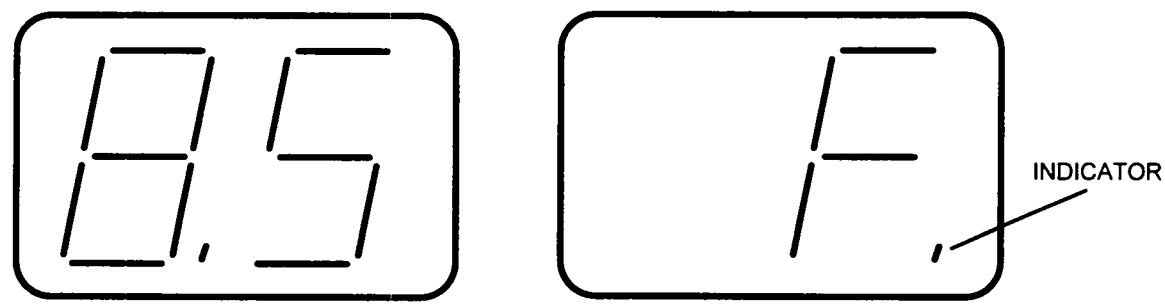
Digit 1 — Baud Rate Indicator
3 = 300 Baud
1 = 1200 Baud (not used)

Digit 2 — Telephone Parameters Indicator
– = telephone parameters not set
P = (when flashing) parameters not valid
P = (when solid) parameters OK

Indicator — IPPV Indicator

On	=	IPPV (credit) enabled
Flashing	=	IPPV transactions not collected
Off	=	IPPV (credit) disabled

The codes displayed for a STARVUE converter and their meaning are shown below.



Frequency Display — 8.3 to 10.4 frequency in MHz

Level Display — 0-9, A, B, C, D, E, and F representing 16 discrete levels from 30 dBmV to 58 dBmV (nominal)

Indicator — IPPV Indicator

On	=	IPPV (credit) enabled
Flashing	=	IPPV transactions not collected
Off	=	IPPV (credit) disabled

IMPULSE 7000 Converters: Entry Error Codes

When a subscriber enters an unauthorized or disallowed command to the converter, a P code error automatically appears on the converter display. These error codes and their meaning are shown below:

P Code	Problem and Symptom	Action Required
P1	*Problem:* Wrong user access code. *Symptom:* Purchase (unlock) not allowed.	*Subscriber:* Try access code again. *Operator:* No action is required.
P2	*Problem:* Penalty time running after three unsuccessful code entry attempts. *Symptom:* Purchase (unlock) not allowed.	*Subscriber*: Wait 15 minutes, then try again. *Operator*: If problem persists, clear access code(s) for subscriber.
P3	*Problem:* Everyday event purchase selected. *Symptom:* Error displayed during TCP entry.	*Subscriber:* Change "day" entry to single day. *Operator:* No action required.
P4	*Problem:* Credit limit exceeded. *Symptom:* Purchase not allowed.	*Subscriber*: Call Operator to refresh credit. *Operator:* Refresh credit if desired.
P5	*Problem:* Transaction Table full. *Symptom:* Purchase not allowed	*Subscriber:* Call Operator to clear slots. *Operator:* Poll box and clear table, if desired.
P7	*Problem:* Credit limit equals zero. *Symptom:* Purchase not allowed.	*Subscriber:* Call Operator to request credit. *Operator:* Verify account status, and extend new credit.
P8	*Problem:* Valid time stamp not yet received. *Symptom:* Purchase not allowed.	*Subscriber*: Wait a few minutes and try again. *Operator:* No action required unless problem persists.
P9	*Problem:* Event not purchasable. *Symptom:* Event purchase cannot be completed.	*Subscriber:* Retune channel and try again. *Operator*: No action required.
PE	*Problem:* Cannot purchase - error code in effect. *Symptom:* Purchase not allowed.	*Subscriber:* Check cable connections, then call Operator. *Operator:* Check for Error codes (F, O) then schedule service.

tem

No matter how much care is taken, there will be times when the ACC-4000 and billing system databases will go out of synchronization. Most billing systems, however, are able to send the ACC-4000 refresh hits.

The exact means of generating these refreshes will vary from billing system to billing system. In some, the refreshes are performed in the background (that is, they are sent between normal wire link hits). Others perform this function by Converter ID range, while in some it is performed on a percentage basis.

Reconciliation Procedure

The procedure used on the ACC-4000 side is relatively simple:

1. Add a dummy service to the ACC-4000 database. This should have a description reading "SERVICE FOR REFRESH - MM/DD/YY".

2. Run the DBAPAYS utility to add the dummy service to all converters on the ACC-4000. DBAPAYS can be invoked from the Control System Options Menu, Invoke Database Utility Programs option. Contact General Instrument at 1-800-537-7653 for the special password you need to run the DBPAYS.

3. Start the refresh on the billing system. When the "Refresh" is received by the ACC-4000, the dummy service will go away, since the billing system does not know about the dummy service. The customer billing computer should go through its database completely. Correct all wire link errors generated, and re-send the change transactions.

4. Run a report on the ACC-4000 to determine how many converters still have the dummy service on their records. These converters are on the ACC-4000 not the billing system.

The next step depends upon how many of the ACC-4000 converters still have the dummy service in their records. The most important step in reconciling the ACC-4000 database with its customer billing system counterpart, however, is to identify the reason for the discrepancy. The goal is to prevent the discrepancy from re-occurring.

When performing the above procedure, several wire link options can be used to facilitate this process:

- Print out refresh differences between the host and the addressable controller
- Update the differences between the two computers.

The DBDCONVID utility can be used to delete the converters on the ACC-4000 but not on the billing system. This allows you to delete converters using 21 different selection criteria, including:

- Account Number
- Service Number
- If the converter is inactive
- If the service for refresh is present (see step 1).

The DBDCONVID can be invoked from the Control System Options Menu, Invoke Database Utility Programs option. Contact General Instrument at 1-800-537-7653 for the special password you need to run the DBDCONVID.

Using WLMTR to Monitor the Wire Link

You can monitor the wire link by using the WLMTR utility. This utility provides these functions:

- Printing the wire link transaction log
- Displaying the wire link transactions as they occur
- Paging thorough the transaction log
- Displaying the raw ASCII or Hex wire link data

To run the WLMTR utility:

1. From a 132-size window, enter WLMTR at the % prompt.
2. At the "Enter the Wire Link to Monitor: " prompt enter **1.**
3. Follow the instructions on the screen to run the utility.
4. Press the Ctrl + Z keys at any time to exit.

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